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# **Race, Sex, and Business Enterprise: Evidence from Denver, Colorado**

Prepared for the City and County of Denver, Colorado



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### I. Introduction and Executive Summary

#### A. Introduction

Like many local governments, the City and County of Denver has long been committed to including Minority-Owned Business Enterprises (MBE), Women-Owned Business Enterprises (WBE), and Disadvantaged Business Enterprises<sup>1</sup> (DBE) in its contracting activities. The courts have made it clear, however, that in order to implement a race- and gender-based program that is effective, enforceable and legally defensible, Denver must meet the judicial test of constitutional “strict scrutiny” to determine the legality of such initiatives. Strict scrutiny requires current “strong evidence” of the persistence of discrimination, and “narrowly tailored” measures to remedy that discrimination.

To assist in this assessment, Denver commissioned the NERA Economic Consulting study team to examine the past and current status of MBEs, WBEs, and DBEs (collectively, “M/W/DBEs” or “M/WBEs”) in Denver’s geographic and product markets for construction, construction-related professional services, and concessions-related goods and services. The results of NERA’s Study, summarized below, provide an important part of the record necessary to implement new and revised M/W/DBE policies that comply with the requirements of the courts and to assessing the extent to which previous and current M/W/DBE policies have assisted M/W/DBEs in participating in Denver’s contracting and procurement activity.

We found both statistical and anecdotal evidence of business discrimination against M/W/DBEs in virtually all major procurement categories and data sources we examined. Our examination included an analysis of Denver’s own public sector contracting behavior as well as that of its prime contractors and consultants. We also analyzed the statistical record for evidence of disparate impact in the private sector of the relevant markets. Furthermore, as a check on our statistical findings, we surveyed the contracting experiences and credit access experiences of M/W/DBEs and non-M/W/DBE in the relevant markets and conducted a series of in-depth personal interviews with local area business enterprises, both M/W/DBE and non-M/W/DBE.

The Study is presented in eight chapters. Chapter I contains this Executive Summary and overview of the Study. Chapter II provides a detailed overview of the current legal environment governing public sector affirmative action programs. The remaining Chapters address the following questions:

Chapter III: What is Denver’s relevant geographic market and how is it defined? What are the relevant product markets and how are they defined?

Chapter IV: What percentage of all businesses in Denver’s relevant markets are owned by minorities and/or women? What percentage are “small” versus “large”? How are these availability estimates constructed?

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<sup>1</sup> As defined in 49 CFR §26.5.

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- Chapter V: Do minority and/or female wage and salary earners earn less than similarly situated White males? Do minority and/or female business owners earn less from their businesses than similarly situated White males? Are minorities and/or women in the Denver region less likely to be self-employed than similarly situated White males? How do the Denver area findings differ from the national findings on these questions? How have these findings changed over time?
- Chapter VI: Do minorities and/or women face discrimination in the market for commercial capital and credit compared to similarly situated White males? How do findings for the Western region differ from findings nationally? How do findings for Denver and Colorado differ from findings nationally?
- Chapter VII: During the last five years, to what extent have M/W/DBEs been utilized by Denver and its prime contractors and how does this utilization compare to the availability of M/W/DBEs in the relevant marketplace?
- Chapter VIII: How many M/W/DBEs report disparate treatment in the last five years? What types of discriminatory experiences are most frequently encountered by M/W/DBEs? How do the experiences of M/W/DBEs differ from those of non-M/W/DBEs regarding the difficulty of obtaining contracts?
- Chapter IX: What are the outlines of the Small Business Enterprise Program? What have been the experiences of M/W/DBEs and non-M/W/DBEs with the Small Business Enterprise (SBE) Program? What have been firms' experiences with overall City contracting policies and procedures? What has been the experience of City personnel with the SBE Program? What has been the experience of City personnel with overall City contracting policies and procedures?
- Chapter X: Based on the Study findings, what are NERA's recommendations for revised contracting policies and procedures in construction, construction-related goods and services, and concessions-related goods and services.

In assessing these questions, we undertake in Chapters IV through IX to present a series of quantitative and qualitative analyses that compare minority and/or female outcomes to non-minority male outcomes in all of these business-related areas. The remainder of this Executive Summary provides a brief overview of each chapter and its key findings and conclusions, where applicable.

### **B. Legal Standards for Government Affirmative Action Programs**

Chapter II provides a detailed and up-to-date overview of current constitutional standards and case law on strict scrutiny of race-conscious government efforts in public contracting. This area of constitutional law is complex and constantly shifting. The elements of Denver's compelling interest in remedying identified discrimination and the narrow tailoring of its programs to

address that important government concern are delineated, and particular judicial decisions, statutes, regulations, etc. are discussed as relevant, with emphasis on critical issues and evidentiary concerns. Examples include the proper tests for examining discrimination and the role of disparities, the applicability of private sector evidence, and Denver's responsibility to narrowly tailor its program. These parameters guide the balance of this report.

### **C. Defining the Relevant Markets**

Chapter III describes how the relevant geographic and product markets were defined for this Study. Denver's records of public contracts and associated subcontracts were analyzed to determine the geographic radius around the City that accounts for at least 75 percent of contract and subcontract spending over the last five years in the relevant procurement categories. These records were also analyzed to determine which detailed industry categories collectively account for at least 75 percent of contract and subcontract spending over the last five years in the relevant procurement categories. The relevant geographic and product markets were then used to focus and frame the quantitative and qualitative analyses in the Study.

### **D. Statistical Evidence of Discrimination**

The courts have held that statistical evidence of race- or gender-based disparities in business enterprise activity is a requirement for any state or local entity to adopt race-conscious or gender-conscious contracting requirements. Chapter IV estimates current availability levels in Denver for M/W/DBEs in various industry groups. Chapters V and VI document in considerable detail the extent of disparity facing M/W/DBEs in the private sector, where contracting and procurement activities are rarely subject to M/W/DBE requirements. Chapter VII examines whether there is statistical evidence of disparity in the contracting and subcontracting activities of the City and County of Denver itself.

#### **1. M/W/DBE Availability in Denver's Market Place**

Chapter IV estimates the percentage of firms in Denver's relevant marketplace that are owned by minorities and/or women. For each industry category, M/W/DBE availability is defined as the number of M/W/DBEs divided by the total number of businesses in Denver's contracting market area. Determining the total number of businesses in the relevant markets is more straightforward than determining the number of minority- or women-owned businesses in those markets. The latter task has three main parts: (1) identify all listed M/W/DBEs in the relevant market; (2) verify the ownership status of listed M/W/DBEs; and (3) estimate the number of unlisted M/W/DBEs in the relevant market.

We used Dun & Bradstreet's *MarketPlace* database to determine the total number of businesses operating in the relevant geographic and product markets. *MarketPlace* is a comprehensive database of U. S. businesses containing over 13 million continuously updated records, and Dun & Bradstreet issues a revised version each quarter. For this Study, we used data for the third quarter of 2005. We used the *MarketPlace* database to identify the total number of businesses in each four-digit Standard Industrial Classification (SIC) code to which we had anticipated assigning a product market weight. Industry weights reflect City and Denver International

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Airport (DIA) prime contracts and associated subcontracts awarded and substantially completed during FY2000-FY2004.

While extensive, *MarketPlace* does not adequately identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in *MarketPlace*, experience has demonstrated that many are missed. For this reason, several additional steps were required to identify the appropriate percentage of M/W/DBEs in the relevant market. First, NERA completed an intensive regional search for information on minority-owned and woman-owned businesses in the City and County of Denver and surrounding areas. Beyond the information already in *MarketPlace*, NERA collected listings of M/W/DBEs from the City and County itself as well as from numerous other public and private entities in and around Denver. The M/W/DBE businesses identified in this manner are referred to as “listed” M/W/DBEs.

If the listed M/W/DBEs we identified are *all* in fact M/W/DBEs and are the *only* M/W/DBEs among all the businesses identified, then an estimate of “listed” M/W/DBE availability is simply the number of listed M/W/DBEs divided by the total number of businesses in the relevant market. However, neither of these two conditions holds true in practice and therefore this is not an appropriate method for measuring M/W/DBE availability. To deal with this “misclassification/non-classification bias,” we conducted a supplementary telephone survey on a stratified random sample of firms in our baseline business population that asked them directly about the race and sex of the firm’s primary owner(s). We used the results of these surveys to statistically adjust our estimates of M/W/DBE availability for misclassification by race and sex. The resulting estimates of M/W/DBE availability are presented at the end of Chapter IV and used in Chapter VII for disparity testing compared to Denver’s own contracting and subcontracting activity over the last five years. These availability figures are also averaged by their industry weights to provide guidance on aggregate (*i.e.* not contract-level) goal-setting.

Table A provides a top-level summary of the M/W/DBE availability estimates derived in this Study.

**Table A. Aggregate Business Availability by Major Procurement Category (Percentages)**

Procurement Category	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
<i>CONSTRUCTION</i>	1.22	5.55	1.36	0.99	12.80	21.92	78.08	97.84
<i>PROFESSIONAL SERVICES</i>	0.43	2.62	1.37	0.31	10.25	14.97	85.03	96.67
<i>CONCESSIONS</i>	0.80	6.60	7.10	1.19	20.61	36.31	63.73	97.59

Source: See Tables 4.15, 4.16, and 4.17.

### **2. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings**

Chapter V demonstrates that current M/W/DBE availability in the City and County of Denver, as measured in Chapter IV, is substantially and statistically significantly lower than those that would be expected to be observed if commercial markets operated in a race- and sex-neutral manner. This suggests that minorities and women are substantially and significantly less likely to own their own businesses as the result of discrimination than would be expected based upon their observable characteristics, including age, education, geographic location, and industry. We find that these groups also suffer substantial and significant earnings disadvantages relative to comparable White males, whether they work as employees or entrepreneurs.

Data from the Current Population Survey (CPS) and the Five Percent Public Use Microdata Samples (PUMS) from the 2000 decennial census were used to examine the incidence of minority and female business ownership (self-employment) and the earnings of minority and female business owners across the U.S. and within the Denver region. The 2000 PUMS contains observations representing five percent of all U.S. housing units and the persons in them (approximately 14 million records), and provides the full range of population and housing information collected in the most recent census. Business ownership status is identified through the “class of worker” variable, which allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings. The CPS is the source of official government statistics on employment and unemployment and has been conducted monthly for over 40 years by the U.S. Census Bureau and the U.S. Department of Labor. Currently, about 56,500 households are interviewed monthly, scientifically selected on the basis of area of residence to represent the Nation as a whole, individual States, and large metropolitan areas.

Using the PUMS and the CPS we found:

For the U.S. as a whole and the economy as a whole, average annual wages for Blacks (both sexes) in 2000 were almost 30 percent lower than for White males who were otherwise similar in terms of geographic location, industry, age, and education. These differences are large and statistically significant. Large, negative, and statistically significant wage disparities are also observed for Hispanics, Asians, Native Americans, and White women. These disparities are consistent with the presence of discrimination. Observed disparities for these groups range from a low of -17 percent for Hispanics to a high of -36 percent for White women. Similar results are observed when the analysis is restricted to construction and A&E. That is, large, negative, and statistically significant wage disparities are observed for all minority groups and for white women. All wage and salary disparity analyses were then repeated using interaction terms designed to specifically test whether observed disparities in Denver were different enough from elsewhere in the country or the economy to alter any of the basic conclusions regarding wage and salary disparity. They were not.

This analysis demonstrates that prime age minorities and women earn substantially and significantly less from their labors than their White male counterparts. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduces the future availability of M/W/DBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are

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most likely to lead to entrepreneurial opportunities. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower M/W/DBE availability levels than would be observed in a race- and sex-neutral marketplace.

Next, we analyzed race and sex disparities in business owner earnings. We observed large, negative, and statistically significant business owner earnings disparities for Blacks, Hispanics, Asians, Native Americans, and White women consistent with the presence of discrimination in these markets. Large, negative, and statistically significant business owner earnings disparities are observed in the PUMS data for the construction and A&E sector as well for all groups but Asians. The CPS construction and A&E data show large, negative and statistically significant business owner earnings disparities for Blacks, Hispanics, and White females. Coefficients for Asians, and Native Americans in the CPS data were typically large and negative but not always statistically significant. As with the wage and salary disparity analysis, we enhanced our basic statistical model to test whether minority and female business owners in the Denver region differ significantly enough from business owners elsewhere in the U.S. economy to alter any of our basic conclusions regarding disparity. They did not.

As was the case for wage and salary earners, prime age minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated White male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that directly and adversely affects M/W/DBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of White males, growth rates will slow, business failure rates will increase, and as demonstrated in this Chapter, business formation rates will decrease. Combined, these phenomena result in lower M/W/DBE availability levels than would otherwise be observed in a race- and sex-neutral marketplace.

Next, we analyzed race and sex disparities in business formation. As with earnings, in almost every case we observed large, negative, and statistically significant disparities consistent with the presence of discrimination in these markets. For the economy as a whole, business formation rates for Blacks, Hispanics, and Native Americans were 17-38 percent lower than the corresponding White male business formation rate. For Asians, estimates ranged from 3 percent higher to 11 percent lower. For White women, business formation rates are estimated to be 7-9 percent lower. For the construction and A&E sector, business formation rates for Hispanics, Asians, Native Americans, and White women were 20-53 percent lower than the corresponding White male business formation rate. For Blacks, estimates ranged from 35 percent higher to 47 percent lower.

As a further check on the statistical findings in this Chapter, we present evidence from the Census Bureau’s *Survey of Business Owners and Self-Employed Persons* (SBO), formerly known as the *Surveys of Minority- and Women-Owned Business Enterprises* (SMWOBE). The SBO collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups and has been conducted every five years since 1972. Using the SBO data we calculate the percentage of firms in Colorado in 2002 that were owned by minorities or by women and compare this to their

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corresponding share of sales and receipts in that year. We divide the latter by the former and multiply the product by 100 to create a disparity ratio.

Statistically significant disparity ratios of less than 100 indicate disparate impact consistent with business discrimination against minority- and female-owned firms. In Colorado, disparity ratios are quite large—less than 80 percent in all but one case examined. The most severe disparities are observed among Black-owned, Native American-owned, and female-owned firms. The 2002 SBO results also reveal that minority-owned and female-owned firms use significantly more employees per dollar of sales and have significantly higher payrolls per dollar of sales than do non-minority and male-owned firms. One explanation for this observation is that these firms respond to marketplace discrimination by, among other things, employing additional inputs in the production process in the form of more labor (per unit of sales) and higher labor compensation (per unit of sales).<sup>2</sup> This economically rational response to discrimination on the part of minority- and female-owned firms can, ironically, reinforce their competitive disadvantage in the public and private marketplace where lowest cost is often the determining factor in the award of contracting and procurement opportunities.<sup>3</sup> These additional disadvantages can then translate into even lower business owner earnings and business formation rates.

In summary, for the private sector statistical analyses there were 18 potential outcomes for Blacks, Hispanics, and White Females, and 12 potential outcomes for Asians and Native Americans. Measures tested were wage and salary worker earnings, business owner earnings, and business formation both in the economy as a whole and in the construction/A&E sector specifically.

For Blacks: 15 out of 18 potential outcomes were adverse and statistically significant, 1 of 18 potential outcomes was adverse but not significant, and 2 of 18 potential outcomes were not adverse and not significant.

For Hispanics: 15 out of 18 potential outcomes were adverse and statistically significant, 2 of 18 potential outcomes were adverse but not significant, and 1 of 18 potential outcomes was not adverse and not significant.

For White Females: all 18 potential outcomes were adverse and statistically significant.

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<sup>2</sup> Marketplace discrimination can take many forms. A variety of examples are listed below in Table 8.3.

<sup>3</sup> For example, the original disparity study for the City of Atlanta and Fulton County, Georgia (Brimmer and Marshall, 1990) recounted the story that one of the earliest Black-owned construction contractor/developer's in that city had to set up a White-owned real estate subsidiary to purchase land for development on his behalf because of racially restrictive deed covenants and because whites would not sell land to blacks. More contemporary examples were recounted of MBE firms having to take on White partners in order to gain access to their network of personal contact to secure private sector business, and of MBEs that had to send all-White staff out to complete sales to White customers. All of these examples could cause a MBE firm to use more labor and pay more for labor than non-MBE firms that did not face marketplace discrimination.

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For Asians: 9 out of 12 potential outcomes were adverse and statistically significant, 2 of 12 potential outcomes were adverse but not significant, and 1 of 18 potential outcomes was not adverse and not significant.

For Native Americans: 11 out of 12 potential outcomes were adverse and statistically significant and 1 of 12 potential outcomes were adverse but not significant.

Table B provides a summary of these key results from the regression analyses presented in Chapter V.

**Table B. Summary of Private Sector Disparity Analysis Outcomes**

	<b>ALL INDUSTRIES</b>		
	2000 PUMS	1979-91 CPS	1992-2002 CPS
	<i>WAGE AND SALARY DISPARITIES</i>		
<b>BLACK</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>HISPANIC</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>ASIAN</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>NATIVE</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>OTHER</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	N/A
<b>WHITE FEMALE</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
	2000 PUMS	1979-1991 CPS	1992-2002 CPS
	<i>BUSINESS OWNER EARNINGS DISPARITIES</i>		
<b>BLACK</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>HISPANIC</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>ASIAN</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>NATIVE</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>OTHER</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	N/A
<b>WHITE FEMALE</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
	2000 PUMS	1979-1991 CPS	1992-2002 CPS
	<i>BUSINESS FORMATION DISPARITIES</i>		
<b>BLACK</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>HISPANIC</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>ASIAN</b>	POS	N/A	<b>NEG/SIG</b>
<b>NATIVE</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>OTHER</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	N/A
<b>WHITE FEMALE</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>

Table B. Summary of Private Sector Disparity Analysis Outcomes, Cont'd

<b>CONSTRUCTION AND AE INDUSTRIES</b>			
	2000 PUMS	1979-91 CPS	1992-2002 CPS
<i>WAGE AND SALARY DISPARITIES</i>			
<b>BLACK</b>	<b>NEG/SIG</b>	<b>NEG</b>	<b>NEG/SIG</b>
<b>HISPANIC</b>	<b>NEG/SIG</b>	<b>NEG</b>	<b>NEG/SIG</b>
<b>ASIAN</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>NATIVE</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>OTHER</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	N/A
<b>WHITE FEMALE</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
	2000 PUMS	1979-1991 CPS	1992-2002 CPS
<i>BUSINESS OWNER EARNINGS DISPARITIES</i>			
<b>BLACK</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>HISPANIC</b>	POS	<b>NEG/SIG</b>	<b>NEG</b>
<b>ASIAN</b>	<b>NEG</b>	N/A	<b>NEG</b>
<b>NATIVE</b>	<b>NEG/SIG</b>	N/A	<b>NEG</b>
<b>OTHER</b>	<b>NEG/SIG</b>	<b>NEG</b>	N/A
<b>WHITE FEMALE</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
	2000 PUMS	1979-1991 CPS	1992-2002 CPS
<i>BUSINESS FORMATION DISPARITIES</i>			
<b>BLACK</b>	POS	POS	<b>NEG/SIG</b>
<b>HISPANIC</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>
<b>ASIAN</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>NATIVE</b>	<b>NEG/SIG</b>	N/A	<b>NEG/SIG</b>
<b>OTHER</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	N/A
<b>WHITE FEMALE</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>	<b>NEG/SIG</b>

Source: Tables 5.1–5.12, Tables 5.15–5.20.

Notes: “N/A” means category is not applicable; “SIG” means regression coefficient(s) is statistically significant ( $p < 0.05$ , two-tailed test), *i.e.* highly unlikely to be due to random chance alone; “NEG” means regressions coefficient(s) measuring race/sex effect is negative—indicating presence of an adverse disparity; “POS” means regression coefficient(s) measuring race/sex effect is positive.

### 3. Statistical Disparities in Capital Markets

In Chapter VI, we analyze data from the National Survey of Small Business Finances (NSSBF) conducted by the Federal Reserve Board and the U.S. Small Business Administration, along with data from a survey we conducted in the Denver region, to examine whether discrimination exists in the small business credit market. Discrimination in the credit market against minority-owned small businesses can have an important effect on the likelihood that that business will succeed. Moreover, discrimination in the credit market might even prevent the business from opening in the first place. This analysis has been held by courts to be probative of an entity’s compelling interest in remedying discrimination. We provide qualitative and quantitative evidence supporting the view that minority-owned firms, particularly Blacks, are discriminated against in this market.

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The results are as follows:

- Minority-owned firms were particularly likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied.
- When minority-owned firms did apply for a loan, their loan requests were substantially more likely to be denied than other groups, even after accounting for differences in factors like size and credit history.
- When minority-owned firms did receive a loan, they were charged higher interest rates on the loan than was true of comparable White-owned firms.
- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for White-owned firms.
- A greater share of minority-owned firms believes that the availability of credit is the most important issue likely to confront the firm in the next 12 months.
- Judging from the analysis done using data from the NSSBF, there is no reason to believe that evidence of discrimination in the market for credit is different in Colorado, the Western region, or in the construction industries than it is in the nation as a whole.
- The evidence from our statistical analysis of Denver's geographic market area, taken from the Denver Credit Survey that we conducted, is entirely consistent with the results we obtained using data from the NSSBF.

We conclude that there is statistically significant evidence of discrimination in Denver in the small business credit market, particularly with respect to firms owned by Blacks. We find little or no significant evidence, however, that White Females are discriminated against in this market.

### **4. M/W/DBE Public Sector Utilization in Denver's Contracting and Procurement Markets, 2000-2004**

Chapter VII provides a quantitative overview of the extent to which Denver and its prime contractors and consultants have utilized M/W/DBEs between 2000 and 2005. Because of the *Concrete Works* decision, outside of DIA's federal mandates under the Disadvantaged Business Enterprise (DBE) Program, for the time period under study, Denver's contracting activities were not subject to any race- and gender-conscious requirement. We observed adverse and statistically significant disparities between current availability levels and participation in Denver contracting and subcontracting opportunities in many cases. In other cases, however, we observed participation levels that were proportional to or even exceeded current availability levels. We take this as evidence that the influence of Denver's historical affirmative action policies, in place from 1983 through March 2000, helped to prevent minority-owned firms and women-owned firms from being driven completely out of the public contracting market in the wake of the *Concrete Works* injunction. Moreover, we take it as evidence that M/W/DBE firms have been

able to take advantage of the Small Business Enterprise Program that replaced the M/WBE Program after March, 2000. As we demonstrate in Chapter V, however, since current M/W/DBE availability levels have been depressed by the effects of past and ongoing discrimination the absence of disparity in some of these categories is illusory.

Furthermore, M/W/DBE utilization on Denver's construction contracts and subcontracts has trended strongly downward during the study period, suggesting that the early results achieved through SBE subcontracting goals are not a reliable guide to future outcomes. Denver's M/W/DBE utilization in construction peaked in 2002 at 17.2 percent (of which 10.8 percent was earned by minority-owned firms and 6.4 percent by White female-owned firms). For 2003 this figure declined to 11.5 percent (of which 8.1 percent was to minority firms and 3.4 percent to White female firms). By 2004, the figure had declined to 8.6 percent (of which 6.9 percent was to minority firms and 1.7 percent to White female firms).

### **E. Anecdotal Evidence**

#### **1. Mail Survey of Disparities in Denver's Market Place**

Chapter VIII presents the results of a large scale mail survey we conducted of M/W/DBEs and non-M/W/DBEs about their experiences and difficulties involved in obtaining contracts. The purpose of this survey was to quantify and compare anecdotal evidence on the experiences of M/W/DBEs and non-M/W/DBEs.

We mailed M/W/DBE and non-M/W/DBE questionnaires to a random sample of firms in Denver's geographic market area. We asked about bid requirements and other factors (bonding and insurance requirements, etc.) affecting their ability to obtain contracts. The questionnaires also asked for characteristics of the firms and the owners such as the number of years the firm has been in business, the number of employees, revenue, and the education level of the primary owner. The M/W/DBE questionnaire also asked firms whether they experienced disparate treatment in various business dealings (such as commercial loan applications and obtaining price quotes from suppliers or subcontractors) in the past five years due to their race or gender and how often prime contractors who use them as subcontractors on public-sector projects with M/W/DBE requirements also use them on public-sector or private-sector projects without such goals or requirements.

Many survey respondents had done or attempted to do business with Denver or other public entities in Colorado in the past five years. The survey results show that a large proportion of M/W/DBE respondents reported that they had been treated less favorably in various business dealings in the last five years. Moreover, in several categories, a larger fraction of M/W/DBEs than non-M/W/DBEs reported that various bid requirements and other factors made it harder or impossible to obtain contracts. Finally, the survey also demonstrated that prime contractors who use M/W/DBEs on public sector contracts with goals rarely hire, or even solicit, such firms on projects without goals, either public or private.

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### **2. Business Owner Interviews**

Chapter VIII also presents the results from a series of in-depth personal group interviews conducted with M/W/DBE and non-M/W/DBE business owners in mid-2005. The purpose of these interviews was much the same as the mail surveys. However, the longer interview length and more intimate interview setting was designed to allow for more in-depth responses from business owners.

The interview findings mirror the results from the mail surveys and public hearing that were also held in mid-2005. In general, minorities and women reported that they still encounter significant barriers to doing business in the public and private sector market places in Denver. They often suffer from stereotypes about their suspected lack of competence and are subject to higher performance standards than similar White men. They also encounter discrimination in obtaining loans and surety bonds. While achieving some success in being awarded City contracts and subcontracts, M/W/DBEs report that it is still unusual for them to receive prime contracts. This is particularly problematic for engineering and architecture firms.

Very few M/W/DBEs have obtained work in the private sector. Prime contractors and consultants that use them on projects with affirmative action goals seldom or never use them, or even solicit them, for participation on non-goals jobs. Minorities and women attributed this market failure to active and passive discrimination.

### **F. Small Business Enterprise Program and Procurement Policies and Procedures Analysis and Feedback Interviews**

Chapter IX summarizes Denver's Small Business Enterprise Program as well as current procurement policies and procedures as they affect M/W/DBEs. We spoke with dozens of firm owners, and interviewed many Denver officials with responsibility for contracting and the SBE Program.

In general, we found that minorities and women believe that the SBE Program, which is not facially remedial, was less effective than the prior race- and gender-based Program. This view was mostly echoed by Denver's staff. Overall, M/W/DBEs and City personnel agreed that the SBE Program has not been an adequate substitute for the race- and gender-conscious program enjoined in 2000. Adding small firms owned by White males to the pool eligible for the contracting preference has reduced opportunities for minorities and women. Coupled with the virtual absence of M/W/DBE participation in the private sector and thus their overdependence on City contracts and subcontracts, this may have reduced M/W/DBEs' have full and fair access to City contracts.

M/W/DBEs felt that there is a lack of monitoring of the SBE goals and sometimes a lack of commitment to the Program by City employees. Several majority-owned firms, however, believe that the Program is too burdensome and that there not enough qualified SBEs to meet the goals.

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There was universal agreement among M/W/DBEs, non-M/W/DBEs and City officials that more training for all firms is needed to increase their competitiveness. This includes financing and bonding assistance and other supportive services for SBEs and smaller firms.

Some participants sought greater participation and authority for Division of Small Business Opportunity (DSBO), including earlier and greater involvement in the contracting decision-making process and making the Division a cabinet-level agency reporting directly to the Mayor.

Regarding contract policies and procedures, firm participants suggested that contracts be unbundled; overly broad and restrictive insurance, bonding and prequalification requirements be reduced; the use of on call and task order contracts be reduced; City employees communicate more with contractors and subcontractors; the prevailing wage system be reformed; and change orders and payment applications be processed promptly.



### II. Legal Standards for Government Affirmative Action Contracting Programs

Like many local governments, Denver has long been committed to including M/W/DBEs in its contracting activities. The courts have made it clear, however, that in order to implement a race- and gender-based program that is effective, enforceable and legally defensible, Denver must meet the judicial test of constitutional “strict scrutiny” to determine the legality of such initiatives. Strict scrutiny requires current “strong evidence” of the persistence of discrimination and “narrowly tailored” measures to remedy that discrimination.

#### A. General Overview of Strict Scrutiny

This area of constitutional law is complex and constantly shifting, and cases are quite fact specific. Over the last 17 years, federal appellate and district courts have developed parameters for establishing a government’s compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. The following are the legal evidentiary and program development issues Denver must consider in evaluating whether to implement a new M/WBE construction program.

##### 1. *City of Richmond v. J.A. Croson*

*City of Richmond v. J.A. Croson Co.*<sup>4</sup>, established the constitutional contours of permissible race-based public contracting programs. Reversing long established law, the Supreme Court for the first time extended the highest level of judicial examination to legislation that benefits the historic victims of discrimination. Strict scrutiny requires that a government entity prove both its “compelling interest” in remedying identified discrimination based upon “strong evidence,” and that the measures adopted to remedy that discrimination are “narrowly tailored” to that evidence. However benign the government’s motive, race is always so suspect a classification that its use must pass the highest constitutional test of “strict scrutiny.”

The Court struck down the City of Richmond’s Minority Business Enterprise (MBE) Plan that required prime contractors awarded City construction contracts to subcontract at least 30 percent of the project to MBEs. A business located anywhere in the country which was at least 51 percent owned and controlled by “Black, Spanish-speaking, Oriental, Indian, Eskimo, or Aleut” citizens was eligible to participate. The Plan was adopted after a public hearing at which no direct evidence was presented that the City had discriminated on the basis of race in awarding contracts or that its prime contractors had discriminated against minority subcontractors. The only evidence before the City Council was: (a) Richmond’s population was 50 percent Black, yet less than one percent of its prime construction contracts had been awarded to minority businesses; (b) local contractors’ associations were virtually all White; (c) the City Attorney’s opinion that the Plan was constitutional; and (d) general statements describing widespread racial discrimination in the local, Virginia, and national construction industries.

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<sup>4</sup> 488 U.S. 469 (1989).

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In affirming the court of appeal's determination that the Plan was unconstitutional, Justice Sandra Day O'Connor's plurality opinion rejected the extreme positions that local governments either have *carte blanche* to enact race-based legislation or must prove their own illegal conduct:

a state or local subdivision ... has the authority to eradicate the effects of private discrimination within its own legislative jurisdiction. ... [Richmond] can use its spending powers to remedy private discrimination, if it identifies that discrimination with the particularity required by the Fourteenth Amendment. ... [I]f the City could show that it had essentially become a "passive participant" in a system of racial exclusion ... [it] could take affirmative steps to dismantle such a system.<sup>5</sup>

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by either notions of racial inferiority or blatant racial politics. This highest level of judicial review "smokes out" illegitimate uses of race by assuring that the legislative body is pursuing a goal important enough to warrant use of a highly suspect tool.<sup>6</sup> It further ensures that the means chosen "fit" this compelling goal so closely that there is little or no possibility that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that it is racial stigma that strict scrutiny seeks to expose; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.<sup>7</sup>

Race is so suspect a basis for government action that more than "societal" discrimination is required to restrain racial stereotyping or pandering. The Court provided no definition of "societal" discrimination or any guidance about how to recognize the ongoing realities of history and culture in evaluating race-conscious programs. The Court simply asserted that

[w]hile there is no doubt that the sorry history of both private and public discrimination in this country has contributed to a lack of opportunities for black entrepreneurs, this observation, standing alone, cannot justify a rigid racial quota in the awarding of public contracts in Richmond, Virginia.... [A]n amorphous claim that there has been past discrimination in a particular industry cannot justify the use of an unyielding racial quota. It is sheer speculation how many minority firms there would be in Richmond absent past societal discrimination.<sup>8</sup>

Richmond's evidence was found to be lacking in every respect. The City could not rely upon the disparity between its utilization of MBE prime contractors and Richmond's minority population because not all minority persons would be qualified to perform construction projects; general population representation is irrelevant. No data were presented about the availability of MBEs in either the relevant marketplace or their utilization as subcontractors on City projects.<sup>9</sup> According to Justice O'Connor, the extremely low MBE membership in local contractors' associations could be explained by "societal" discrimination or perhaps Blacks' lack of interest in participating as business owners in the construction industry. To be relevant, the City would have

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<sup>5</sup> *Id.* at 491-92.

<sup>6</sup> *See also Grutter v. Bollinger*, 123 S. Ct. 2325, 2338 (2003) ("Not every decision influenced by race is equally objectionable, and strict scrutiny is designed to provide a framework for carefully examining the importance and the sincerity of the reasons advanced by the governmental decision maker for the use of race in that particular context.").

<sup>7</sup> *Id.* at 493.

<sup>8</sup> *Id.* at 499.

<sup>9</sup> *Id.*

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to demonstrate statistical disparities between eligible MBEs and actual membership in trade or professional groups. Further, Richmond presented no evidence concerning enforcement of its own anti-discrimination ordinance.<sup>10</sup> Finally, Richmond could not rely upon Congress' determination that there has been nationwide discrimination in the construction industry. Congress recognized that the scope of the problem varies from market to market, and in any event it was exercising its powers under Section Five of the Fourteenth Amendment, whereas a local government is further constrained by the Amendment's Equal Protection Clause.<sup>11</sup>

In the case at hand, the City has not ascertained how many minority enterprises are present in the local construction market nor the level of their participation in City construction projects. The City points to no evidence that qualified minority contractors have been passed over for City contracts or subcontracts, either as a group or in any individual case. Under such circumstances, it is simply impossible to say that the City has demonstrated "a strong basis in evidence for its conclusion that remedial action was necessary."<sup>12</sup>

The foregoing analysis was applied only to Blacks. The Court then emphasized that there was "absolutely no evidence" against other non-Whites. "The random inclusion of racial groups that, as a practical matter, may have never suffered from discrimination in the construction industry in Richmond, suggests that perhaps the City's purpose was not in fact to remedy past discrimination."<sup>13</sup>

Having found that Richmond had not presented evidence in support of its compelling interest in remedying discrimination, the Court went on to make two observations about the narrowness of the remedy. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30 percent quota had no basis in evidence, and was applied regardless of whether the individual MBE had suffered discrimination.<sup>14</sup> Further, Justice O'Connor rejected the argument that individualized consideration of Plan eligibility is too administratively burdensome.

Apparently recognizing that the opinion might be misconstrued to categorically eliminate all race-conscious contracting efforts, Justice O'Connor closed with these admonitions:

Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that non-minority contractors were systematically excluding minority businesses from subcontracting opportunities it could take action to end the discriminatory exclusion. Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise. Under such circumstances, the City could act to dismantle the closed business system by taking appropriate measures against those who discriminate on the basis of race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion. Moreover, evidence of a pattern of individual

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<sup>10</sup> *Id.* at 502.

<sup>11</sup> *Id.* at 504.

<sup>12</sup> 488 U.S. at 510.

<sup>13</sup> *Id.*

<sup>14</sup> See *Grutter*, 123 S. Ct. at 2343 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

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discriminatory acts can, if supported by appropriate statistical proof, lend support to a local government's determination that broader remedial relief is justified.<sup>15</sup>

### 2. Strict scrutiny as applied to federal enactments

In *Adarand v. Peña*,<sup>16</sup> the Court again overruled long settled law and extended the application of strict scrutiny to federal enactments. Just as in the local government context, when evaluating federal legislation and regulations

[t]he strict scrutiny test involves two questions. The first is whether the interest cited by the government as its reason for injecting the consideration of race into the application of law is sufficiently compelling to overcome the suspicion that racial characteristics ought to be irrelevant so far as treatment by the government is concerned. The second is whether the government has narrowly tailored its use of race, so that race-based classifications are applied only to the extent absolutely required to reach the proffered interest. The strict scrutiny test is thus a recognition that while classifications based on race may be appropriate in certain limited legislative endeavors, such enactments must be carefully justified and meticulously applied so that race is determinative of the outcome in only the very narrow circumstances to which it is truly relevant.<sup>17</sup>

In the wake of *Adarand*, Congress reviewed and revised the Disadvantaged Business Enterprise (DBE) Program statute<sup>18</sup> and implementing regulations<sup>19</sup> for federal-aid contracts in the transportation industry. To date, every court that has considered the issue has found the regulations to be constitutional on their face.<sup>20</sup> While binding strictly only upon the DBE Program, these cases provide important guidance to a local government about the types of evidence necessary to establish its compelling interest in adopting affirmative action contracting remedies and how to narrowly tailor those remedies.

For example, in *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*,<sup>21</sup> the court held that Congress had strong evidence of widespread race discrimination in the construction industry.<sup>22</sup> The court took a “hard look” at the evidence Congress considered, and concluded that the legislature had

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<sup>15</sup> 488 U.S. at 509 (citations omitted).

<sup>16</sup> 515 U.S. 200 (1995) (*Adarand III*).

<sup>17</sup> *Adarand Constructors, Inc. v. Peña*, 965 F. Supp. 1556, 1569 (D. Colo. 1997) *rev'd*, 228 F.3d 1147 (2000) (“*Adarand IV*”); *see also Adarand III*, 515 U.S. at 227.

<sup>18</sup> Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21), Pub. L. No. 105-178 (b)(1), 112 Stat. 107, 113.

<sup>19</sup> 49 CFR Part 26.

<sup>20</sup> *See, e.g., Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147 (10<sup>th</sup> Cir. 2000) (“*Adarand VII*”), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001).

<sup>21</sup> 345 F.3d. 964 (8<sup>th</sup> Cir. 2003), *cert. denied*, 124 S.Ct. 2158 (2004).

<sup>22</sup> *See also Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, \_\_\_ (9<sup>th</sup> Cir. 2005) (“In light of the substantial body of statistical and anecdotal material considered at the time of TEA-21's enactment, Congress had a strong basis in evidence for concluding that--in at least some parts of the country--discrimination within the transportation contracting industry hinders minorities' ability to compete for federally funded contracts.”).

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spent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, the plaintiff presented evidence that the data were susceptible to multiple interpretations, but failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.<sup>23</sup>

Next, the regulations were facially narrowly tailored, as was the state's application of those regulations. Unlike the prior Program, Part 26 provides that:

- The overall goal must be based upon demonstrable evidence of the number of DBEs ready, willing and able to participate on the recipient's federally assisted contracts.
- The goal may be adjusted upwards to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination.
- The recipient must meet the maximum feasible portion of the goal through race-neutral measures as well as estimate that portion of the goal it predicts will be met through such measures.
- The use of quotas and set-asides is limited only to those severe situations in which no other remedy will be effective.
- The goals must be adjusted during the year to remain narrowly tailored.
- Absent bad faith administration of the Program, a recipient cannot be penalized for not meeting its goal.
- Exemptions and waivers from any or all Program requirements are available.

These elements led the court to conclude that the Program is narrowly tailored on its face. First, the regulations place strong emphasis on the use of race-neutral means to achieve minority and women participation. Relying upon *Grutter v. Bollinger*, the court held that while “[n]arrow tailoring does not require the exhaustion of every conceivable race-neutral alternative ... it does require serious, good faith consideration of workable race-neutral alternatives.”<sup>24</sup>

The DBE Program is also flexible. Eligibility is limited to small firms owned by persons whose net worth is less than \$750,000. There are built-in Program time limits, and the State may terminate its program if it meets its annual overall goal through race-neutral means for two consecutive years. Moreover, required Congressional reauthorization will ensure periodic public debate.

The court next held that the goals are tied to the relevant labor market. “Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*.”<sup>25</sup>

Finally, Congress has taken significant steps to minimize the race-conscious nature of the Program. “[W]ealthy minority owners and wealthy minority-owned firms are excluded, and

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<sup>23</sup> *Id.* at 970; see also *Western States, ibid.*

<sup>24</sup> *Sherbrooke III*, 345 F.3d. at 972.

<sup>25</sup> *Id.* at 973.

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certification is available to persons who are not presumptively [socially] disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor.”<sup>26</sup>

Turning to the Minnesota Department of Transportation’s (Mn/DOT) application of the regulations to its individual circumstances, the court also held that the results of the regulations as applied were sufficiently narrowly tailored. Mn/DOT relied upon a study conducted by National Economic Research Associates, Inc. (NERA) and Colette Holt & Associates to set its DBE goal. This Study employed a methodology similar to that applied in this Study for Denver, including the analysis of DBE availability and the examination of disparities in the business formation rates and business earnings of minorities and women compared to similarly-situated White males. The Eighth Circuit opined that while plaintiff

presented evidence attacking the reliability of NERA’s data, it failed to establish that better data was [sic] available or that Mn/DOT was otherwise unreasonable in undertaking this thorough analysis and in relying on its results. The precipitous drop in DBE participation in 1999, when no race-conscious methods were employed, supports Mn/DOT’s conclusion that a substantial portion of its 2001 overall goal could not be met with race-neutral measures, and there is no evidence that Mn/DOT failed to adjust its use of race-conscious and race-neutral methods as the year progresses as the DOT regulations require.<sup>27</sup>

In the most recent judicial review of the constitutionality of the DBE Program, and a recipient’s implementation of the regulations, the district court upheld the constitutionality of the Illinois Department of Transportation’s (IDOT) DBE Program. In its first opinion, the court held that Part 26 is facially constitutional, relying heavily on *Adarand VII* and *Sherbrooke*.<sup>28</sup> After a thorough review of the evidence considered by Congress in reauthorizing and revising the DBE Program, the judge granted summary judgment for the federal defendants because

despite the voluminous “evidence” Plaintiff offers to nullify the data relied on by Congress and the *Adarand VII* court, Plaintiff has not met its burden “of introducing credible, particularized evidence to rebut the government’s initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.” *Adarand VII*, 228 F.3d at 1175.29

In the second opinion rendering verdict after trial on the claim against the State defendant, the court held that IDOT’s DBE Program was narrowly tailored as applied.<sup>30</sup> To determine whether IDOT met its constitutional and regulatory burdens, the court reviewed the evidence of discrimination against minority and women construction firms in the Illinois area. IDOT had commissioned a NERA Study to meet Part 26’s requirements. Similar to this Study for Denver, the IDOT Study included a custom census of the availability of DBEs in IDOT’s marketplace, weighted by the location of IDOT’s contractors and the types of goods and services IDOT

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<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2004 U.S. Dist. LEXIS, 3226 (N.D. Ill., Mar. 3, 2004) (“*Northern Contracting I*”).

<sup>29</sup> *Id.* at 64.

<sup>30</sup> *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868 (N.D. Ill. Sept. 8, 2005) (“*Northern Contracting II*”). Ms. Holt and Dr. Wainwright testified as IDOT’s expert witnesses at the trial.

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procures. NERA estimated that DBEs comprised 22.77 percent of IDOT's available firms.<sup>31</sup> The IDOT Study next examined whether and to what extent there are disparities between the rates at which DBEs form businesses relative to similarly situated White men, and the relative earnings of those businesses. If disparities are large and statistically significant, then the inference of discrimination can be made. Controlling for numerous variables such as the owner's age, education, and the like, the Study found that in a race- and gender-neutral marketplace the availability of DBEs would be approximately 20.8 percent higher, for an estimate of DBE availability "but for" discrimination of 27.51 percent.

In conformance with Part 26's "step 2" analysis of the availability of DBEs "but for" the operation of the DBE program and the effects of discrimination,<sup>32</sup> IDOT relied upon a NERA Study conducted for Metra, the Chicago suburbs' commuter railroad.<sup>33</sup> The Metra Study included a survey in which 50.6 percent of minority- or women-owned construction firms reported that firms that use or solicit their services on contracts with race or gender participation goals rarely or never solicit or subcontract with their firms on non-goals projects. Similarly, 54.1 percent of minority- or women-owned professional services firms reported that they were seldom or never solicited to bid for non-goals projects. In addition, the Metra Study found that DBEs suffered discrimination in the markets for construction loans. Specifically, the Study found that, controlling for creditworthiness, DBEs were more likely to have loan applications denied, and when such loans are approved, were more likely to pay higher interest rates. Finally, the Metra Study found disparities in the earnings and business formation rates of minorities and women similar to those found in the IDOT Study.

In addition to the NERA Studies, the court reviewed the evidence presented to the Chicago City Council in support of its revised M/WBE Construction Program ordinance in 2004. In addition to other expert reports, the court relied upon an expert report prepared by Dr. David Blanchflower that examined and compared the rates of business formation for minorities and women with those of white males within the City of Chicago. Using 2000 U.S. Census Bureau data, Dr. Blanchflower concluded that, after controlling for relevant variables such as credit worthiness, minorities and women are less likely to form businesses, and that when they do form businesses, those businesses achieve lower earnings than businesses owned by white males.

To supplement this extensive statistical evidence, IDOT conducted a series of public hearings during 2004 to obtain further information regarding discrimination in the construction industry. A large number of minority and female business owners testified that they were rarely, if ever, solicited to bid on non-goals projects. Several DBEs identified prime contractors who rarely or never solicited their bids on non-goals projects, despite the fact that, in some instances, the witnesses' firms had satisfactorily completed work for the contractors on goals projects. Twenty such prime contractors were identified in the Chicago area, with which IDOT had spent more than 34 percent of its Chicago area expenditures between 2000 and 2004. To follow up this

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<sup>31</sup> This baseline figure of DBE availability is the "step 1" estimate U.S. DOT grant recipients must make pursuant to 49 CFR §26.45(c).

<sup>32</sup> 49 CFR §26.45(d).

<sup>33</sup> NERA Economic Consulting, 2000, "Disadvantaged Business Enterprise Availability Study," prepared for the Northeast Illinois Regional Commuter Rail Corporation D/B/A Metra.

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testimony, IDOT requested documents from the 20 firms concerning their use and solicitation of DBEs on non-goal projects. Not one of the firms responded to the letters. Although IDOT took no further action to pursue the matter, the court held the State properly concluded from the firms' silence that the witnesses' allegations had merit.

IDOT also presented and the judge relied upon “unremediated market data.” This proof established that DBE participation on contracts without race- or gender- conscious subcontracting goals was well below DBE utilization on contracts that had such goals in the same market place. Such data were evidence of what IDOT's market conditions would look like in the absence of DBE goals, and thus were relevant both to the continuing effects of discrimination as well as to whether IDOT could achieve its overall DBE goal without using race-conscious subcontracting goals.

In addition, the court considered IDOT's “Zero Goals” experiment. During 2001 and 2002, IDOT solicited a portion of its highway construction contracts without DBE goals. DBEs received approximately 1.5 percent of the total dollar value of those contracts, and approximately 17 percent of the total dollar value of all subcontracts awarded, well below the rates on goals jobs.

At trial, DBEs testified regarding the difficulties they face in obtaining IDOT prime contracts and subcontracts, and described instances in which they believed they were discriminated against based on their race or gender. The witnesses recounted their struggles to obtain work in the private sector and unanimously reported that they were rarely invited to bid on such contracts. They explained that they were reluctant to submit unsolicited bids due to the expense involved as well, as the low success rate of such bids. A number of DBEs identified specific firms for which they had successfully completed subcontracting work on goals projects, but who nevertheless rarely solicited them to submit bids for subcontracts on non-goals projects. Several DBEs also testified about incidents of direct discrimination in the industry and recounted discrimination in obtaining financing, bonds and insurance. Finally, DBEs reported that they encountered difficulties in obtaining prompt payment for their work, leading to serious cash-flow problems and jeopardizing their businesses' success. Since public agencies are more likely to pay slowly, the DBEs desired more non-goals private sector work, where prompt payment is the norm. Their greater reliance on public work because of barriers to obtaining private work further increased their vulnerabilities.

Based upon this record, the court held that IDOT's DBE plan was based upon sufficient proof of discrimination such that race-neutral measures alone would be inadequate to assure that DBEs operate on a “level playing field” for government contracts.

The stark disparity in DBE participation rates on goals and non-goals contracts, when combined with the statistical and anecdotal evidence of discrimination in the relevant marketplaces, indicates that IDOT's 2005 DBE goal represents a “plausible lower-bound estimate” of DBE participation in the absence of discrimination.... Plaintiff presented no persuasive evidence contravening the conclusions of IDOT's studies, or explaining the disparate usage of DBEs on goals and non-goals contracts.... IDOT's proffered evidence of discrimination against DBEs was not limited to alleged discrimination by prime contractors in the award of subcontracts. IDOT also presented evidence that

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discrimination in the bonding, insurance, and financing markets erected barriers to DBE formation and prosperity. Such discrimination inhibits the ability of DBEs to bid on prime contracts, thus allowing the discrimination to indirectly seep into the award of prime contracts, which are otherwise awarded on a race- and gender-neutral basis. This indirect discrimination is sufficient to establish a compelling governmental interest in a DBE program... Having established the existence of such discrimination, a governmental entity “has a compelling interest in assuring that public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice.”<sup>34</sup>

### 3. Preferences for women

Whether affirmative action procurement programs that benefit women are subject to the lesser constitutional standard of “intermediate scrutiny” has yet to be settled by the Supreme Court.<sup>35</sup> Most courts have applied intermediate scrutiny to preferences for women, and then upheld or struck down the female preference under that standard.<sup>36</sup> This is probably a distinction without meaningful difference, as only one post-*Croson* court has upheld WBE provisions while striking down M/WBE measures.<sup>37</sup> Further, as observed by the Seventh Circuit Court of Appeals, applying intermediate scrutiny to gender “creates the paradox that a public agency can provide stronger remedies for sex discrimination than for race discrimination; it is difficult to see what sense that makes.”<sup>38</sup> Therefore, Denver would be wise to meet the rigors of strict scrutiny for gender preferences.

### 4. Burdens of production and proof

Unlike most legal challenges, the defendant has the initial burden of producing “strong evidence” in support of the program. The plaintiff must then proffer evidence to rebut the government’s case, and bears the ultimate burden of production and persuasion that the affirmative action program is unconstitutional.<sup>39</sup> There is no need of formal legislative findings,<sup>40</sup> nor “an ultimate

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<sup>34</sup> *Northern Contracting II*, at \*82 (internal citations omitted); see *Croson*, 488 U.S. at 492.

<sup>35</sup> Cf. *United States v. Virginia*, 518 U.S. 515 (1996) (applying standard of “exceedingly persuasive justification” in striking down Virginia Military Institute’s males only admissions policy).

<sup>36</sup> See, e.g., *Northern Contracting I*, at \*44 (women’s status as presumptively socially disadvantaged passes intermediate scrutiny); *W.H. Scott Construction Co., Inc. v. City of Jackson*, 199 F.3d 206, 215 n.9 (5th Cir. 1999); *Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Engineering Contractors*, 122 F.3d 895, 907-910 (11th Cir. 1997) (“*Engineering Contractors II*”) (WBE program need not be supported by evidence of governmental discrimination nor the remedy of last resort; it must only be the product of analysis rather than stereotype); *Concrete Works, Inc. v. City and County of Denver*, 36 F.3d 1513, 1519 (10<sup>th</sup> Cir. 2003) (“*Concrete Works II*”); *Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990, 1009 (3<sup>rd</sup> Cir. 1993) (“*Philadelphia II*”); *Coral Construction Co. v. King County*, 941 F.2d, 910, 930-931 (9<sup>th</sup> Cir. 1991); but see *Brunet v. City of Columbus*, 1 F.3d 390, 404 (6th Cir. 1993) (applying strict scrutiny).

<sup>37</sup> *Coral Construction*, 941 F.2d at 932 (applying intermediate scrutiny); cf. *Western States*, 407 F.3d. at \_\_\_ (no need to conduct a separate analysis of sex-based classifications under intermediate scrutiny because it would not yield a different result from strict scrutiny).

<sup>38</sup> *Builders Association of Greater Chicago v. County of Cook*, 256 F.3d 642, 644 (7<sup>th</sup> Cir. 2001).

<sup>39</sup> *Adarand VII*, 228 F.3d at 1166; *Scott*, 199 F.3d at 219.

<sup>40</sup> *Webster v. Fulton County, Georgia*, 51 F.Supp.2d 1354, 1364 (N.D. Ga. 1999).

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judicial finding of discrimination before [a local government] can take affirmative steps to eradicate discrimination.”<sup>41</sup> When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.<sup>42</sup> A plaintiff cannot rest upon general criticisms of studies or other evidence; it must carry the case that the government’s proof is inadequate to meet strict scrutiny, rendering the legislation illegal.<sup>43</sup> The determination whether a plaintiff has met this burden is a question of law, subject to *de novo* review.<sup>44</sup>

### **B. Denver’s Compelling Interest in Remediating Identified Discrimination in Its Construction Marketplace**

#### **1. Concrete Works of Colorado, Inc. v. City and County of Denver**

Given the crucial status of the Tenth Circuit Court of Appeals’ decision in *Concrete Works of Colorado, Inc. v. City and County of Denver* (“*Concrete Works IV*”), upholding Denver’s M/WBE Program after more than a decade of litigation, and the extensive treatment of the City’s compelling interest in remediating discrimination in its market place in that opinion, a thorough discussion of the case is highly probative for this Study.

##### **a. Procedural background**

Denver adopted the challenged M/WBE ordinance in 1990. The Program set annual goals of 16 percent for MBEs and 12 percent for WBEs in construction contracts, and 10 percent for both MBEs and WBEs in professional design and construction services contracts. Bidders were to meet contract specific goals or make good faith efforts to do so. The City revised the Program in 1996 and 1998, reducing the annual goals for both MBEs and WBEs in construction contracts to 10% and prohibiting M/WBEs from counting self- performed work towards the goals.

Plaintiff Concrete Works of Colorado, Inc. (CWC), a large construction firm owned by a White male, sued the City in 1992, alleging that it had been denied three contracts for failure to meet the goals or to make good faith efforts to do so and seeking injunctive relief and money damages. The district court granted the City’s motion for summary judgment.<sup>45</sup> The Tenth Circuit reversed

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<sup>41</sup> *Concrete Works II*, 36 F.3d at 1522.

<sup>42</sup> *Engineering Contractors II*, 122 F.3d at 916; *Coral Construction*, 941 F.2d at 921.

<sup>43</sup> *Adarand VII*, 228 F.3d at 1166; *Engineering Contractors II*, 122 F.3d at 916; *Contractors Association of Eastern Pennsylvania v. City of Philadelphia* (“*Philadelphia III*”), 91 F.3d 586, 597 (3<sup>rd</sup> Cir. 1996); *Concrete Works II*, 36 F.3d at 1522 1523; *Webster*, 51 F. Supp. 2d at 1364; *see also Wygant v. Jackson Board of Education*, 476 U.S. 267, 277-278 (1986).

<sup>44</sup> *Adarand VII*, 228 F.3d at 1161; *Associated General Contractors of Ohio v. Drabik*, 214 F.3d 730, 734 (6<sup>th</sup> Cir. 2000); *Scott*, 199 F.3d at 211; *but see Engineering Contractors II*, 122 F.3d at 917 (meeting constitutional test is a question of fact, subject only to appellate review for “abuse of discretion”).

<sup>45</sup> *Concrete Works of Colorado, Inc. v. City and County of Denver*, 823 F.Supp. 821 (D. Colo. 1993) (“*Concrete Works I*”).

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and remanded, holding that genuine issues of material fact precluded summary judgment.<sup>46</sup> The district court, after a bench trial, held the ordinance to be unconstitutional.<sup>47</sup> Denver appealed.<sup>48</sup>

### b. Denver's trial evidence

Denver introduced evidence of its contracting activities dating back to the early 1970s. This consisted of reports of federal investigations into the utilization and experiences of local MBEs and of the City's early affirmative action efforts. M/WBE participation dramatically increased when the City implemented its first MBE ordinance in 1984. After conducting surveys and hearings, Denver extended the Program and increased the goals in 1988.

To comply with *Croson*, the City commissioned a study to assess the propriety of the Program. The 1990 Study found large disparities between the availability and utilization of M/WBEs on City projects without goals. It likewise found large disparities on private sector projects without goals. Interviews and testimony revealed continuing efforts by White male contractors to circumvent the goals. After reviewing the statistical and anecdotal evidence, the City adopted the 1990 Ordinance. A 1991 Study of goods, services and remodeling industries also found large disparities for City contracts not subject to goals.

When the Tenth Circuit reversed and remanded for trial in *Concrete Works II*, the City commissioned another study. The 1995 Study used U.S. Census Bureau data to determine MBE and WBE availability and utilization in the construction and design industries in the Denver Metropolitan Statistical Area (MSA). It calculated separate disparity indices for firms with and without paid employees. Census data were also used to examine average revenues per employee and rates of self-employment. Disparities in self-employment rates persisted even after holding education and length of work experience constant. A telephone survey to determine the availability and utilization of M/WBEs in the Denver MSA showed large disparities in the construction and professional design industries. The 1995 Study included discussion of a 1993 Study for the Denver Housing Authority that found disparities for M/WBEs in some areas in some years, including those when it implemented an affirmative action program, and a 1992 Study for the Regional Transportation District that found large disparities for both prime and subcontracting in the Denver marketplace. Based upon this evidence, the City enacted the 1996 Ordinance.

In 1997, Denver commissioned a study from NERA to examine whether discrimination limited the opportunities of M/WBEs in construction projects of the type undertaken by the City. The Tenth Circuit found this Study used a "more sophisticated" method to calculate availability by:

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<sup>46</sup> *Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513, (10<sup>th</sup> Cir. 1994) ("*Concrete Works II*").

<sup>47</sup> *Concrete Works of Colorado, Inc. v. City and County of Denver*, 86 F.Supp.2d 1042 (D. Colo. 2000) ("*Concrete Works III*").

<sup>48</sup> The Tenth Circuit held that CWC's claims for prospective injunctive relief against the operation of the 1990 and 1996 ordinances became moot as each was amended and replaced by the 1998 ordinance. Plaintiff's retrospective claim for money damages for the enforcement of the 1990 ordinance was not moot.

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(1) specifically determining the City's geographic and procurement marketplace; (2) using Dun & Bradstreet's *Marketplace* data to obtain the total number of available firms and numerous directories to determine the number of M/WBEs; (3) conducting surveys to adjust for possible misclassification of the race and gender of firms; and (4) presenting a final result of weighted averages of availability for each racial group and women for both prime contracts and subcontracts.

The 1997 NERA Study next compared M/WBE availability and utilization in the Colorado construction industry. It also examined 1987 Census data, the most current then available. All comparisons yielded large and statistically significant disparities. The 1997 Study also found that the potential availability of M/WBEs, as measured by the rates at which similarly situated White males form businesses, was significantly greater than their actual availability. The Study next examined whether minorities and women in the construction industry earned less than White males with similar characteristics. Large and statistically significant disparities were found for all groups except Asian-Americans. A mail survey was conducted to obtain anecdotal evidence of the experiences of M/WBEs and non-M/WBEs in the construction industry. Again, with the exception of Asian-Americans, minorities and women with similar characteristics experienced much greater difficulties than their white male counterparts. A follow up telephone survey indicated that the disparities were even greater than first indicated. Based upon the 1997 Study, the City enacted the 1998 Ordinance.

At trial, the City introduced additional anecdotal evidence. M/WBEs testified that they experienced difficulties in pre-qualifying for private sector jobs; their low bids were rejected; they were paid more slowly than non-M/WBEs; they were charged more for materials than non-M/WBEs; they were often required to do additional work not required of White males; and there were barriers to joining trade unions and associations. There was extensive testimony detailing the difficulties M/WBEs suffered in obtaining lines of credit. The “most poignant” testimony involved blatant harassment suffered at work sites, including physical assaults.

### c. Legal analysis and holdings

In reversing the judgment in favor of the plaintiff, the Tenth Circuit held that the district court's legal framework “misstate[d] controlling precedent and Denver's burden at trial.”<sup>49</sup> The trial judge had rejected the City's evidence because it did not answer the following questions:

(1) Is there pervasive race, ethnic and gender discrimination throughout all aspects of the construction and professional design industry in the six county Denver MSA? (2) Does such discrimination equally affect all of the racial and ethnic groups designated for preference by Denver and all women? (3) Does such discrimination result from the policies and practices intentionally used by business firms for the purpose of disadvantaging those firms because of race, ethnicity or gender? (4) Would Denver's use of those discriminating firms without requiring them to give work to certified MBEs and WBEs in the required percentages on each project make Denver guilty of prohibited discrimination? (5) Is the compelled use of certified MBEs and WBEs in the prescribed percentages on particular projects likely to change the discriminatory policies and programs that taint the industry? (6) Is the burden of compliance with Denver's

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<sup>49</sup> 321 F.3d at 970.

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preferential program a reasonable one fairly placed on those who are justly accountable for the proven discrimination?<sup>50</sup>

The imposition of this framework was error.

First, the government need not prove that the statistical inferences of discrimination are “correct.” Strong evidence supporting Denver’s determination that remedial action is necessary need not be “irrefutable or definitive” proof of discrimination. Statistical evidence creating inferences of discriminatory motivations is sufficient and therefore evidence of marketplace discrimination can be used to meet strict scrutiny. It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences, and CWC failed to meet this test.<sup>51</sup>

*Croson* does not require that each group included in the ordinance suffer equally from discrimination. In contrast to Richmond, Denver introduced evidence of bias against each group; that is sufficient.<sup>52</sup>

Denver need not demonstrate that the “ordinances will *change* discriminatory practices and policies” in the local marketplace. Such a test would be “illogical” because firms could defeat the remedial efforts simply by refusing to cease discriminating.<sup>53</sup>

Next, a municipality need not prove that

private firms directly engaged in any discrimination in which Denver passively participates do so intentionally, with the purpose of disadvantaging minorities and women.... Denver's only burden was to introduce evidence which raised the inference of discriminatory exclusion in the local construction industry and link its spending to that discrimination.... Denver was under no burden to identify any specific practice or policy that resulted in discrimination. Neither was Denver required to demonstrate that the purpose of any such practice or policy was to disadvantage women or minorities. To impose such a burden on a municipality would be tantamount to requiring proof of discrimination and would eviscerate any reliance the municipality could place on statistical studies and anecdotal evidence.<sup>54</sup>

Similarly, the trial court was wrong to reject the statistical evidence because such evidence cannot identify the individuals responsible for the discrimination.<sup>55</sup> Such a stricture would render quantitative proof useless and the government helpless to adopt systemic remedies for systemic problems.

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<sup>50</sup> *Concrete Works III*, 86 F.Supp.2d at 1066-67.

<sup>51</sup> *Concrete Works IV*, 321 F.3d at 975.

<sup>52</sup> *Id.* at 976.

<sup>53</sup> *Id.* at 973 (emphasis in the original).

<sup>54</sup> *Id.* at 971.

<sup>55</sup> *Id.* at 974.

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Contrary to the district court's sixth question, the burden of compliance need not be placed only upon those firms accountable for the discrimination. The proper focus is whether the burden on third parties is “too intrusive” or “unacceptable”<sup>56</sup>

*Croson's* requirement that more than “mere societal” discrimination is required is met where the government presents evidence of discrimination in the industry targeted by the program. “If such evidence is presented, it is immaterial for constitutional purposes whether the industry discrimination springs from widespread discriminatory attitudes shared by society or is the product of policies, practices, and attitudes unique to the industry.... The genesis of the identified discrimination is irrelevant.” The trial court was wrong to require Denver to “show the existence of specific discriminatory policies and that those policies were more than a reflection of societal discrimination.”<sup>57</sup>

The court further rejected the notion that a municipality must prove that it is itself guilty of discrimination to meet its burden. Denver demonstrated its compelling interest by “evidence of private discrimination in the local construction industry coupled with evidence that it has become a passive participant in that discrimination ... [by] linking its spending practices to the private discrimination.”<sup>58</sup> Denver further related its award of public dollars to discriminatory conduct through the testimony of M/WBEs that identified general contractors who used them on City projects with M/WBE goals but refused to use or even solicit them on private projects without goals.

The lending discrimination and business formation studies are relevant and probative because they show a strong link between the disbursement of public funds and the channeling of those funds due to private discrimination. “Evidence that private discrimination results in barriers to business formation is relevant because it demonstrates that M/WBEs are precluded *at the outset* from competing for public construction contracts. Evidence of barriers to fair competition is also relevant because it again demonstrates that *existing* M/WBEs are precluded from competing for public contracts.”<sup>59</sup> Plaintiff failed to present evidence to rebut the lending discrimination data because it believed such evidence was irrelevant. Contrary to the trial court’s ruling, the business formation studies were not flawed because they did not control for “quality of education,” “culture” and “religion.” Plaintiff failed not only to define such vague terms but also to conduct its own study controlling for these factors or to produce expert testimony that to do so would eliminate the disparities.<sup>60</sup>

The trial court also erred in rejecting Denver’s disparity studies because they did not control for firm size, area of specialization and whether the firm had bid on City projects. The Tenth Circuit relied upon Denver’s experts in holding that while it may be true that M/WBEs are smaller in general than White male firms, most construction firms are small and can expand and contract to

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<sup>56</sup> *Id.* at 973.

<sup>57</sup> *Id.* at 972-973.

<sup>58</sup> *Id.* at 976.

<sup>59</sup> *Id.* at 977 (emphasis in the original).

<sup>60</sup> *Id.* at 979.

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meet their bidding opportunities. Importantly, Denver established that size and experience are not race- and gender- neutral variables: “M/WBE construction firms are generally smaller and less experienced *because* of discrimination.”<sup>61</sup> Further, plaintiff failed to conduct any study showing that the disparities disappear when such variables are held constant. Likewise, it presented no evidence that controlling for firm specialization explained the disparities. Finally, the number of City bidders was not an accurate measure of availability because it may have included unqualified firms; as long as the same assumptions are applied to M/WBEs and non-M/WBEs disparities must still be explained by the plaintiff. “Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract*.”<sup>62</sup>

That M/WBEs were overutilized on City projects with goals goes only to the weight of the evidence because it reflects the effects of a remedial program. Denver presented evidence that goals and non-goals projects were similar in purpose and scope and that the same pool of contractors worked on both types. “Particularly persuasive” was evidence that M/WBE participation declined significantly when the Program was amended in 1989. The “utilization of M/WBEs on City projects has been affected by the affirmative action programs that have been in place in one form or another since 1977. Thus, the non-goals data is [sic] the better indicator of discrimination in public contracting” and supports the position that discrimination was present before the enactment of the ordinances.<sup>63</sup>

There is no requirement that anecdotal testimony be verified. “Denver was not required to present corroborating evidence and CWC was free to present its own witnesses to either refute the incidents described by Denver's witnesses or to relate their own perceptions on discrimination in the Denver construction industry.”<sup>64</sup> This “failure” of the legislative body to somehow verify testimony had been a favorite shibboleth of plaintiffs in other cases.<sup>65</sup>

The court held that because plaintiff had waived its claim that the ordinances were not narrowly tailored at an earlier stage in this litigation, the district court's holding in *Concrete Works I* that the ordinances satisfy the other prong of strict scrutiny was affirmed.

In summary, the court stated that

to meet its initial burden, Denver was not required to unequivocally establish the existence of discrimination nor was it required to 'negate all evidence of non-discrimination.' [citation omitted] ... Denver met its initial burden of producing strong evidence of racial discrimination in the Denver construction industry. Denver has also shown that the gender-based measures were based on reasoned analysis. Moreover, although CWC does not raise the issue, we conclude that Denver had a strong basis in evidence to conclude that action was necessary to remediate discrimination against M/WBEs *before* it adopted both the 1990 Ordinance and the 1998 Ordinance. [citation omitted] ... CWC cannot meet its burden of proof through conjecture and unsupported criticisms of Denver's evidence.... Denver has shown

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<sup>61</sup> *Id.* at 981 (emphasis in the original).

<sup>62</sup> *Id.* at 983 (emphasis in the original).

<sup>63</sup> *Id.* at 987-988

<sup>64</sup> *Id.* at 989.

<sup>65</sup> *See, e.g., Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087, 1090 (N.D. Ill. 2000).

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that it has a compelling interest in remedying racial discrimination in the Denver construction industry and that it has an important governmental interest in remedying gender discrimination. CWC has failed to rebut Denver's showing.<sup>66</sup>

### 2. Additional judicial analyses of compelling interest

*Concrete Works* is now the definitive opinion on the application of strict scrutiny to a local government's compelling interest in implementing race- and gender-conscious programs. Other cases have also examined evidence of the disparate impacts of economic factors on M/WBEs and the disparate treatment of such firms by actors critical to entrepreneurial success. Discrimination must be shown through the use of statistics and economic models to examine the effects of systems or markets on different groups, as well as by evidence of personal experiences with discriminatory conduct, policies or systems.<sup>67</sup> Specific evidence of discrimination or its absence may be direct or circumstantial, and should include economic factors and opportunities in the private sector affecting the success of M/WBEs.<sup>68</sup> The following are the types of proof other courts have analyzed to evaluate whether a program passes constitutional muster.

#### a. Definition of the entity's marketplace

*Croson* counsels that a state or local government may only remedy discrimination within its own contracting marketplace. Richmond was specifically faulted for including minority contractors from across the country in its program.<sup>69</sup> Therefore, this Study for Denver employs long established economic principles to empirically establish the geographic and industry dimensions of Denver's construction contracting marketplace, in order to ensure that the evidence is narrowly tailored.<sup>70</sup> Both elements are necessary to determine the reach of a M/WBE program.

#### b. Disparities between the availability and utilization of M/WBEs in the marketplace

Next, statistical examination of the availability of minorities and women to contract with Denver and its history of utilizing M/WBEs is required. Simple disparities between Denver's overall minority population and its utilization of M/WBEs are not enough.<sup>71</sup> The primary inquiry is whether there are statistically significant disparities between the availability of M/WBEs and utilization of such firms.

Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discrimination could arise. In the extreme case,

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<sup>66</sup> 321 F.3d at 991-992.

<sup>67</sup> See, e.g., *Adarand VII*, 228 F.3d at 1166 ("statistical and anecdotal evidence are appropriate").

<sup>68</sup> *Id.*

<sup>69</sup> *Croson*, 488 U.S. at 508.

<sup>70</sup> *Concrete Works II*, 36 F.3d at 1520 (to confine data to strict geographic boundaries would ignore "economic reality").

<sup>71</sup> *Croson*, 488 U.S. at 501-02; *Drabik*, 214 F.3d at 736.

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some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.<sup>72</sup>

This is known as the “disparity index” or “disparity ratio.” This index is calculated by dividing the utilization of M/WBEs by the availability of M/WBEs. Courts have looked to disparity indices in determining whether *Croson’s* evidentiary foundation is satisfied.<sup>73</sup> An index less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability.

Calculations of the availability of minority- and women-owned firms are therefore the crucial foundation for examining affirmative action in contracting.<sup>74</sup> In addition to creating the disparity index, correct measures of availability are necessary to determine whether discriminatory barriers depress the formation of firms by minorities and women, and the success of such firms in doing business in both the public and private sectors.<sup>75</sup> Flawed availability measures have led to the demise of existing race- and gender-based programs.<sup>76</sup>

### c. Unremediated market data

It is also critical to measure M/WBE participation in the absence of affirmative action goals, if such evidence is available. Evidence of race and gender discrimination in relevant “unremediated”<sup>77</sup> markets provides an important indicator of what level of actual M/WBE participation can be expected in the absence of government mandated affirmative efforts to contract with M/WBEs.<sup>78</sup> The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars.<sup>79</sup> If M/WBE utilization is below availability in unremediated markets, an inference of discrimination may be supportable. The virtual disappearance of M/WBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers to minority subcontractors, “raising the specter of racial discrimination.”<sup>80</sup> As held by the Tenth Circuit, such an analysis addresses whether Denver has

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<sup>72</sup> *Croson*, 488 U.S. at 509; see *Webster*, 51 F.Supp.2d at 1363, 1375.

<sup>73</sup> See, e.g., *Scott*, 199 F.3d at 218; *Concrete Works II*, 36 F.3d at 1526-1527; *O’Donnell Construction Co., Inc. v. District of Columbia*, 963 F.2d 420, 426 (D.C. Cir. 1992); *Coalition for Economic Equity*, 950 F.2d at 1414; *Cone Corp. v. Hillsborough County*, 908 F.2d 909, 916 (11th Cir. 1990).

<sup>74</sup> *Philadelphia III*, 91 F.3d at 603; cf. *Webster*, 51 F.Supp.2d at 1372 (no explanation for the source nor any indicia of the accuracy or reliability of availability figures).

<sup>75</sup> *Webster*, 51 F.Supp.2d at 1372; see *Northern Contracting*, at \*70 (IDOT’s custom census approach was supportable because “discrimination in the credit and bonding markets may artificially reduce the number of registered” minority- and women-owned firms).

<sup>76</sup> See, e.g., “City of Boston Disparity Study,” prepared by Mason Tillman Associates, Ltd., 2003.

<sup>77</sup> “Unremediated market” means “markets that do not have race- or gender-conscious subcontracting goals in place to remedy discrimination.” *Northern Contracting*, at \*36.

<sup>78</sup> See, e.g., *Western States*, 407 F.3d at 992 (Congress properly considered evidence of the “significant drop in racial minorities’ participation in the construction industry” after state and local governments removed affirmative action provisions).

<sup>79</sup> See, e.g., *Drabik*, 214 F.3d at 734-735.

<sup>80</sup> *Adarand VII*, 228 F.3d at 1174.

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been and continues to be a “passive participants” in such discrimination.<sup>81</sup> The “dramatic decline in the use of M/WBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated,” was proof of the government’s compelling interest in employing race- and gender-conscious measures.<sup>82</sup> Evidence of unremediated markets “sharpen[s] the picture of local market conditions for MBEs and WBEs.”<sup>83</sup>

### d. Anecdotal evidence

Anecdotal evidence of experiences with discrimination in contracting opportunities, including testimony from other governments’ studies and programs, is relevant since it goes to the question of whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.<sup>84</sup> Such proof may consist of owner interviews; statistically sound surveys; and public hearings. Anecdotal evidence about discrimination by prime contractors, unions, bonding companies, suppliers and lenders has been found relevant to the creation of barriers both to minority subcontractors’ business formation and to their success on governmental projects.<sup>85</sup> While anecdotal evidence is insufficient standing alone,<sup>86</sup> “[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government’s] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative.”<sup>87</sup> “[W]e do not set out a categorical rule that every case must rise or fall entirely on the sufficiency of the numbers. To the contrary, anecdotal evidence might make the pivotal difference in some cases; indeed, in an exceptional case, we do not rule out the possibility that evidence not reinforced by statistical evidence, as such, will be enough.”<sup>88</sup>

## C. Narrowly Tailoring a M/WBE Program

The following factors must be considered in determining whether a race-based remedy is narrowly tailored to achieve its purpose:

- The efficacy of race-neutral remedies at overcoming identified discrimination;
- The relationship of numerical benchmarks for government spending to the availability of M/WBEs and to subcontracting goal setting procedures;

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<sup>81</sup> See also *Philadelphia III*, 91 F.3d at 599-601.

<sup>82</sup> *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725, 737 (N.D. Ill. 2003).

<sup>83</sup> *Concrete Works II*, 36 F.3d at 1529.

<sup>84</sup> See, e.g., *Webster*, 51 F.Supp.2d at 1363, 1379.

<sup>85</sup> *Adarand VII*, 228 F.3d at 11168-11172.

<sup>86</sup> Cf. *Engineering Contractors I*, 943 F.Supp. at 1580 (anecdotal evidence cannot cure weaknesses in statistical evidence).

<sup>87</sup> *Concrete Works II*, 36 F.3d at 1520, 1530.

<sup>88</sup> *Engineering Contractors II*, 122 F.3d at 926.

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- The flexibility of the program requirements, including the provision for good faith efforts to meet goals and contract specific goal setting procedures;
- The congruence between the remedies adopted and the beneficiaries of those remedies;
- Any adverse impact of the relief on third parties; and
- The duration of the program.<sup>89</sup>

### 1. Race- and gender-neutral remedies

Race- and gender-neutral approaches have become a necessary component of a defensible and effective M/WBE program.<sup>90</sup> Such initiatives include, for example, unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding and insurance important to all small and emerging businesses.<sup>91</sup> For example, difficulty in accessing the bidding system, restrictive bid specifications, excessive experience requirements, and overly burdensome insurance and/or bonding requirements can all be corrected by Denver without resort to using race or gender in decision making. Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies or others.<sup>92</sup> At a minimum, entities must track the utilization of minority and women firms as a measure of their success in the bidding process, including as subcontractors.<sup>93</sup>

However, strict scrutiny does not require that every race-neutral approach must be implemented and then proven to be ineffective before race-conscious remedies may be utilized.<sup>94</sup> While an entity must give good faith consideration to race-neutral alternatives, “strict scrutiny does not require exhaustion of every possible such alternative.... Some degree of practicality is subsumed in the exhaustion requirement.... Localities are not required to pursue irrational, unworkable, ineffective or legally unavailable approaches.”<sup>95</sup>

### 2. Goal setting

Numerical goals or benchmarks for M/WBE participation must be substantially related to their availability in the relevant market.<sup>96</sup> One unanswered question is whether goals or benchmarks for overall City contracting may be set higher than estimates of actual current availability. As

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<sup>89</sup> *United States v. Paradise*, 480 U.S. 149, 171 (1987); see also *Sherbrooke III*, 345 F.3d at 971; *Drabik*, 214 F.3d at 738.

<sup>90</sup> *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Drabik*, 214 F.3d at 738; *Philadelphia III*, 91 F.3d at 609 (City’s failure to consider race-neutral alternatives was particularly telling); *Webster*, 51 F.Supp.2d at 1380 (for over 20 years County never seriously considered race-neutral remedies).

<sup>91</sup> See 49 CFR § 26.51.

<sup>92</sup> *Croson*, 488 U.S. at 502; *Webster*, 51 F.Supp.2d at 1380.

<sup>93</sup> See, e.g., *Viridi v. DeKalb County School District*, 2005 U.S. App. LEXIS 11203 at n.8 (11<sup>th</sup> Cir. June 13, 2005).

<sup>94</sup> *Grutter*, 123 S.Ct. at 2344-2345.

<sup>95</sup> *AGC of California*, 950 F.2d at 1417; see also *Cone Corp.*, 908 F.2d at 916.

<sup>96</sup> *Webster*, 51 F.Supp.2d at 1379, 1381 (statistically insignificant disparities are insufficient to support an unexplained goal of 35 percent M/WBE participation in County contracts); see also *Associated Utility Contractors*, 83 F.Supp.2d at 621.

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established by the 1997 NERA Study for Denver and this report, today's availability is diminished by yesterday's discrimination. To freeze the goals at current head counts would set the results of discrimination—depressed M/WBE availability—as the marker of the elimination of discrimination. It therefore should be reasonable for the government to seek to attempt to level the racial playing field by setting targets somewhat higher than current headcount. For example, 49 CFR Part 26 requires grant recipients to determine the availability of DBEs in their marketplaces absent the presence of discrimination.<sup>97</sup> In upholding the DBE regulations, the Tenth Circuit stated that

because Congress has evidence that the effects of past discrimination have excluded minorities from the construction industry and that the number of available minority subcontractors reflects that discrimination, the existing percentage of minority-owned businesses is not necessarily an absolute cap on the percentage that a remedial program might legitimately seek to achieve. Absolute proportionality to overall demographics is an unreasonable goal. However, *Croson* does not prohibit setting an aspirational goal above the current percentage of minority-owned businesses that is substantially below the percentage of minority persons in the population as a whole. This aspirational goal is reasonably construed as narrowly tailored to remedy past discrimination that has resulted in homogenous ownership within the industry. It is reasonable to conclude that allocating more than 95% of all federal contracts to enterprises owned by non-minority persons, or more than 90% of federal transportation contracts to enterprises owned by non-minority males, is in and of itself a form of passive participation in discrimination that Congress is entitled to seek to avoid. *See Croson*, 488 U.S. at 492 (Op. of O'Connor, J.).<sup>98</sup>

At least one court has recognized that goal setting is not an absolute science. In holding the DBE regulations to be narrowly tailored, the Eighth Circuit noted that “[t]hrough the underlying estimates may be inexact, the exercise requires the State to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*.”<sup>99</sup> On the other hand, sheer speculation cannot form the basis for an enforceable measure.<sup>100</sup>

Goals can be set at various levels of particularity and participation. Denver may set overall, aspirational goals for its annual, aggregate spending. Goals may be unitary (*e.g.*, one goal for all eligible groups as in the DBE regulations),<sup>101</sup> or divided into one goal for MBEs and one for WBEs, or separated into goals for each racial and ethnic minority and women. While there is no case law addressing whether and to what extent goals may be disaggregated, that the DBE Program's unitary goal was been upheld by every court suggests that this minimum approach is sufficiently narrowly tailored; further disaggregated goals would presumably be, too.

Specific projects must be subject to subcontracting goals based upon availability of M/WBEs to perform the anticipated scopes of subcontracting and the agency's progress towards meeting its annual targets. Not only is this legally mandated,<sup>102</sup> but also this approach reduces the need to

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<sup>97</sup> 49 CFR § 26.45(d).

<sup>98</sup> *Adarand VII*, 228 F.3d at 1181.

<sup>99</sup> *Sherbrooke*, 345 F.3d at 972

<sup>100</sup> *Id.* (complete absence of evidence for 12-15 percent DBE goal); *see also BAGC v. Chicago*, 298 F.Supp.2d at 740 (City's MBE and WBE goals were “formulistic” percentages not related to the availability of firms).

<sup>101</sup> 49 CFR §26.45(h).

<sup>102</sup> *See Sherbrooke*, 345 F.3d at 972; *Coral Construction*, 941 F.2d at 924.

## Legal Standards for Government Affirmative Action Contracting Programs

conduct good faith efforts reviews as well as the temptation to create “front” companies and sham participation to meet unrealistic contract goals.

### 3. Flexibility

It is imperative that remedies not operate as fixed quotas. A M/WBE program must provide for contract awards to bidders who fail to meet the subcontracting goals but make good faith efforts to do so. Further, bidders who meet the goals cannot be favored over those who made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT’s DBE program.<sup>103</sup> This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.<sup>104</sup>

### 4. Over-inclusiveness and under-inclusiveness of remedies

The over- or under-inclusiveness of those persons to be included in the program is an additional consideration, and goes to whether the remedies truly target the evil identified.<sup>105</sup> The “fit” between the problem and the remedy manifests in three ways: which groups to include, how to define those groups, and which persons will be eligible to be included within those groups.

First, which groups to include must be based upon the evidence.<sup>106</sup> The “random inclusion” of ethnic or racial groups that may never have experienced discrimination in the entity’s marketplace may indicate impermissible “racial politics.”<sup>107</sup> Similarly, the Seventh Circuit, in striking down Cook County’s program, remarked that a “state or local government that has discriminated just against blacks may not by way of remedy discriminate in favor of blacks and Asian-Americans and women.”<sup>108</sup>

The level of specificity at which to define beneficiaries is the next question. Approaches range from a single M/WBE or DBE goal that includes all racial and ethnic minorities and white women,<sup>109</sup> to separate goals for each minority group and women.<sup>110</sup> Ohio’s Program was specifically faulted for lumping together all minorities, with the court questioning the legitimacy of forcing Black contractors to share relief with recent Asian immigrants.<sup>111</sup>

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<sup>103</sup>488 U.S. at 508; *see also Adarand VII*, 228 F.3d at 1181.

<sup>104</sup>*See, e.g., Sherbrooke*, 345 F.3d at 972.

<sup>105</sup> *Association for Fairness in Business, Inc. v. New Jersey*, 82 F.Supp.2d 353, 360 (D. N.J. 2000).

<sup>106</sup> *Philadelphia II*, 6 F.3d at 1007 (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans); *cf. Northeastern Florida Chapter of the AGC v. Jacksonville*, 508 U.S. 656, 113 S.Ct. 2297 (1993) (new ordinance narrowed to African-Americans and women).

<sup>107</sup>*Webster*, 51 F.Supp.2d at 1380–1381.

<sup>108</sup>*BAGC v. Cook County*, 256 F.3d at 646.

<sup>109</sup>*See* 49 CFR §26.45(h) (overall goal must not be subdivided into group-specific goals).

<sup>110</sup>*See Dade County II*, 122 F.3d at 901 (separate goals for African-Americans and Hispanics).

<sup>111</sup>*Drabik*, 214 F.3d at 739.

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Third, program remedies should be limited to those firms that have suffered actual harm. The DBE Program's rebuttable presumptions of social and economic disadvantage have been central to the courts' holdings that it is narrowly tailored. "While TEA21 creates a rebuttable presumption that members of certain racial minorities fall within that class, the presumption is rebuttable, wealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor."<sup>112</sup> Moreover, anyone can challenge the disadvantage of any firm.<sup>113</sup>

### 5. Sharing of the burden by third parties

Failure to make "neutral" changes to contracting and procurement policies and procedures that disadvantage M/WBEs and other small businesses may result in a finding that the program unduly burdens non-M/WBEs.<sup>114</sup> However, "innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.<sup>115</sup> "Implementation of the race-conscious contracting goals for which TEA-21 provides will inevitably result in bids submitted by non-DBE firms being rejected in favor of higher bids from DBEs. Although this places a very real burden on non-DBE firms, this fact alone does not invalidate TEA-21. If it did, all affirmative action programs would be unconstitutional because of the burden upon non-minorities."<sup>116</sup>

### 6. Duration and Review of Programs

"Narrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."<sup>117</sup> One of the factors leading to the court's holding that the City of Chicago's M/WBE Program was no longer narrowly tailored was the lack of a sunset provision.<sup>118</sup> As recently reiterated by the Eleventh Circuit Court of Appeals, the "unlimited duration of the [District's] racial goals also demonstrates a lack of narrow tailoring.... While the District's effort to avoid unintentional discrimination should certainly be ongoing, its reliance on

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<sup>112</sup>*Sherbrooke*, 345 F.3d at 973; *see also Grutter*, 123 S.Ct at 2345-46; *Gratz v. Bollinger*, 4539 U.S. 244, 123 S.Ct 2411, 2429 (2003); *Adarand VII*, 228 F.3d at 1183-1184 (personal net worth limit is element of narrow tailoring); *cf. Associated General Contractors v. City of New Haven*, 791 F.Supp. 941, 948 (D. Conn. 1992) (definition of "disadvantage" was vague and unrelated to goal).

<sup>113</sup> 49 CFR §26.87.

<sup>114</sup>*See Engineering Contractors I*, 943 F.Supp. at 1581-1582 (County chose not to change its procurement system).

<sup>115</sup>*Concrete Works IV*, 321 F.3d at 973; *Wygant*, 476 U.S. at 280-281; *Adarand VII*, 228 F.3 at 1183d ("While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities"); *cf. Northern Contracting II*, at \*5 ("Plaintiff has presented little evidence that it has suffered anything more than minimal revenue losses due to the program.").

<sup>116</sup> *Western States*, 407 F.3d at \_\_\_\_.

<sup>117</sup>*Drabik*, 214 F.3d at 738.

<sup>118</sup> *BAGC v. Chicago*, 298 F.Supp.2d at 739; *see also Webster*, 51 F. Supp. 2d at 1382 (one telling disqualifier was Fulton County had been implementing a "quota" program since 1979 with no contemplation of program expiration).

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racial classifications should not.”<sup>119</sup> Similarly, the USDOT DBE Program’s periodic review by Congress has been repeatedly held to provide adequate durational limits.<sup>120</sup>

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<sup>119</sup> *Virdi*, at \*18.

<sup>120</sup> *See, e.g., Western States*, 407 F.3d at \_\_\_\_.

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### D. Table of Authorities

#### 1. Cases

*Associated General Contractors, Inc. v. Coalition for Economic Equity*, 950 F.2d 1401 (9<sup>th</sup> Cir. 1991).

*Adarand Constructors, Inc. v. Peña* (“*Adarand IIP*”), 515 U.S. 200 (1995).

*Adarand Constructors, Inc. v. Peña* (“*Adarand IV*”), 965 F. Supp. 1556 (D. Colo. 1997), *rev’d*, 228 F.3d 1147 (2000).

*Adarand Constructors, Inc. v. Slater* (“*Adarand VII*”), 228 F.3d 1147 (10<sup>th</sup> Cir. 2000), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001).

*Associated General Contractors of Ohio v. Drabik*, 214 F.3d 730 (6<sup>th</sup> Cir. 2000).

*Associated Utility Contractors of Maryland, Inc. v. Baltimore*, 83 F.Supp.2d 613 (D. Md. 2000).

*Association for Fairness in Business, Inc. v. New Jersey*, 82 F.Supp.2d 353 (D. N.J. 2000).

*Brunet v. City of Columbus*, 1 F.3d 390 (6<sup>th</sup> Cir. 1993).

*Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

*Builders Association of Greater Chicago v. County of Cook*, 256 F.3d 642 (7<sup>th</sup> Cir. 2001).

*Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000).

*City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989).

*Concrete Works of Colorado, Inc. v. City and County of Denver* (“*Concrete Works I*”), 823 F.Supp. 821 (D. Colo. 1993).

*Concrete Works of Colorado, Inc. v. City and County of Denver* (“*Concrete Works II*”), 36 F.3d 1513 (10<sup>th</sup> Cir. 2003).

*Concrete Works of Colorado, Inc. v. City and County of Denver* (“*Concrete Works III*”), 86 F.Supp.2d 1042 (D. Colo. 2000).

*Concrete Works of Colorado, Inc. v. City and County of Denver* (“*Concrete Works IV*”), 321 F.3d 950 (10<sup>th</sup> Cir. 2003).

*Cone Corporation v. Hillsborough County*, 908 F.2d 909 (11<sup>th</sup> Cir. 1990).

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*Contractors Association of Eastern Pennsylvania v. City of Philadelphia* (“Philadelphia II”), 6 F.3d 990 (3rd Cir. 1993).

*Contractors Association of Eastern Pennsylvania v. City of Philadelphia* (“Philadelphia III”), 91 F.3d 586 (3rd Cir. 1996).

*Coral Construction Co. v. King County*, 941 F.2d. 910 (9<sup>th</sup> Cir. 1991).

*Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County* (“Engineering Contractors I”), 943 F.Supp. 1546 (S.D. Fla. 1996)..

*Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County* (“Engineering Contractors II”), 122 F.3d 895 (11<sup>th</sup> Cir. 1997).

*Gratz v. Bollinger*, 4539 U.S. 244 (2003).

*Grutter v. Bollinger*, 123 S. Ct. 2325 (2003).

*Associated General Contractors v. City of New Haven*, 791 F.Supp. 941 (D. Conn. 1992).

*Northeastern Florida Chapter of the AGC v. Jacksonville*, 508 U.S. 656 (1993).

*Northern Contracting, Inc. v. Illinois Department of Transportation* (“Northern Contracting I”), 2004 U.S. Dist. LEXIS, 3226 (N.D. Ill., Mar. 3, 2004).

*Northern Contracting, Inc. v. Illinois Department of Transportation* (“Northern Contracting II”), 2005 U.S. Dist. LEXIS 19868 (Sept. 8, 2005).

*O'Donnell Construction Co., Inc. v. District of Columbia*, 963 F.2d 420 (D.C. Cir. 1992).

*Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d. 964 (8<sup>th</sup> Cir. 2003), cert. denied, 124 S.Ct. 2158 (2004).

*United States v. Paradise*, 480 U.S. 149 (1987).

*United States v. Virginia*, 518 U.S. 515 (1996).

*Virdi v. DeKalb County School District*, 2005 U.S. App. LEXIS 11203 (11<sup>th</sup> Cir. June 13, 2005).

*W.H. Scott Construction Co., Inc. v. City of Jackson*, 199 F.3d 206 (5th Cir. 1999).

*Webster v. Fulton County, Georgia*, 51 F.Supp.2d 1354 (N.D. Ga. 1999).

*Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983 (9<sup>th</sup> Cir. 2005).

*Wygant v. Jackson Board of Education*, 476 U.S. 267 (1986).

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### **2. Statutes**

*Transportation Equity Act for the 21st Century* (“TEA-21”), Pub. L. No. 105-178 (b)(1), 112 Stat. 107, 113

### **3. Regulations**

49 CFR § 26

### III. Defining the Relevant Markets

The *Croson* court held that the U.S. Congress' *national* findings of minority business discrimination in construction and related industries are not specific enough, standing alone, to support a MBE program for the City of Richmond's locally funded contracts. According to the Court, "[t]he probative value of these findings for demonstrating the existence of discrimination in Richmond is extremely limited."<sup>121</sup> To support its conclusion, Justice O'Connor noted that the federal DBE program, by including waivers and other provisions whereby DBE affirmative action requirements could be relaxed under certain conditions, "explicitly recognized that the scope of the problem would vary from market area to market area."<sup>122</sup>

The first step, therefore, in our evaluation of M/W/DBE availability and participation for the City and County of Denver is to define the relevant market area for its construction and construction-related professional services contracting activities. Markets have both a product and a geographic dimension, both of which are considered.<sup>123</sup> For this Study, we define Denver's market area based on its historical contracting and subcontracting records. We define the geographic market dimension by calculating from zip code data the location of the majority of Denver's contractors and subcontractors, and we define the product market dimension by estimating which two-digit, three-digit, and four-digit SIC codes best describe each identifiable contractor, subcontractor, subconsultant, or supplier in those records. In both inquiries, the definitions are weighted according to how many dollars were spent with firms from each zip code or in each two-, three-, or four-digit SIC code so that geographic areas and industries that receive relatively more contracting dollars receive relatively more weight in the estimation of M/W/DBE availability. Once the geographic and industry parameters of Denver's market area have been defined, we can restrict our subsequent analyses to business enterprises and other phenomena within this market area, thereby narrowly tailoring our findings to Denver's specific market area and contracting circumstances.

#### A. Preparing the Master Construction Contract/Subcontract Database

NERA worked with Denver contract compliance staff to identify relevant contracting records for all construction and construction-related projects undertaken since the City's M/WBE program was originally enjoined in *Concrete Works IV*. According to City staff, no projects advertised after April 1, 2000 were subject to M/WBE goals.<sup>124</sup>

For each construction and construction-related contract, we attempted to obtain data including the project title, project description, prime contractor name, address, M/W/DBE status, contract

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<sup>121</sup>*Croson*, 488 U.S. at 504.

<sup>122</sup>*Id.* Since *Croson* concerned a challenge to local program while *Fullilove* concerned a challenge to a federal program, the *Croson* ruling did not directly affect the federal government's array of MBE programs. Strict scrutiny was applied to federal enactments in *Adarand Constructors, Inc. v. Peña* ("*Adarand III*"), 515 U.S. 200 (1995).

<sup>123</sup>See for example, Areeda and Kaplow (1988).

<sup>124</sup>NERA attempted to collect earlier contract and subcontract records for analysis as well. However, most records from this earlier period were no longer available, and those that were available were often incomplete.

## Defining the Relevant Markets

identification number, award date, completion date, and contract amount. For each contract, we also attempted to identify all associated first tier subcontractors, subconsultants, and suppliers (collectively “subcontractors”) and record their business name, address, M/W/DBE status, work assignment, and subcontract amount.

The starting point for our data gathering effort was an electronic copy of Division of Small Business Opportunity’s (DSBO) contract compliance database, prepared in the second quarter of 2005, containing prime contracting and selected subcontracting data from the last quarter of 2000 forward.<sup>125</sup> We also obtained an electronic master listing of current and closed construction and professional services projects (prime contracts only) at DIA. The DSBO and DIA data contained most of the information we sought for prime contractors and the DSBO data contained most of the information we sought for SBE and M/W/DBE subcontractors.<sup>126</sup> However, the DSBO database does not track comparable information on non-SBE and non-M/W/DBE subcontractors.

Data on non-SBE and non-M/W/DBE subcontractors is equally important for purposes of evaluating contracting affirmative action at the level of detail specified by *Croson*. Since expenditures with such subcontractors may be distributed differently across industry categories, excluding them from the analysis would bias our estimates of how Denver’s contracting and subcontracting dollars are distributed by industry.<sup>127</sup> Additional measures were therefore taken to obtain the missing information. For DIA contracts, we obtained contractor Certification of Payment records and contractor Lien Release records in a mix of electronic and hard copy formats. For other Denver agencies, we obtained Certification of Payment records, contractor Lien Release records, and Prime Contractor Background Information Form records in a variety of hard copy formats.

Data from these several sources was then keypunched, collated, cross-referenced, and consolidated to form the Master Contract/Subcontract Database for this Study. After all contractor and subcontractor names were internally reconciled and match-merged, we cross-referenced them with Dun & Bradstreet, American Business Information, Hoover’s Company Records, and other sources in order to assign SIC code(s) to each.<sup>128</sup> SIC codes were assigned at the four-digit level—the most detailed level available. We also used these sources to assign city, state and zip code information in those cases where it was not already available from internal Denver data.

Tables 3.1, 3.2, and 3.3 summarize the contract and subcontract dollars accounted for in the Master Contract/Subcontract database assembled for this Study, covering contracts and subcontracts awarded between the second quarter of 2000 and the second quarter of 2005.

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<sup>125</sup> DSBO was formerly known as the Mayor’s Office of Contract Compliance (MOCC).

<sup>126</sup> The DSBO database includes DIA contracts as well, so there was significant overlap at the prime contract level between these two electronic sources of data.

<sup>127</sup> Despite this legal imperative, we have seen many government entities that do not carefully record or maintain such data.

<sup>128</sup> Other sources include project names, project titles, and contractor industry descriptions, where available, in Denver’s internal contracting records.

## Defining the Relevant Markets

Table 3.1 shows a total of \$1.68 billion in relevant contract and subcontract spending during the Study period. Of this amount, Construction spending accounted for \$1.44 billion, or about 86 percent of total spending, while Professional Services spending accounted for the remaining 14 percent, or about \$239 million. The 406 Construction prime contracts we examined had 2,266 associated subcontracts— an average of 5.6 subcontracts per prime contract. Subcontracting in Construction accounted for 29 percent of all contract dollars on average. The 141 Professional Services prime contracts we examined had 428 associated subcontracts—an average of 3.0 subcontracts per prime contract. Subcontracting in Professional Services accounted for 25 percent of all contract dollars on average.

Table 3.2 provides a breakdown of Construction and Professional Services contract expenditures by year within the Study period. Table 3.3 provides a breakdown of expenditures by Denver City Division within the Study period. In Construction, the DIA and the Design and Construction Management Division collectively account for 75 percent of all contract spending. Other divisions with substantial contract expenditures included Transportation, the Denver Art Museum, Engineering, Wastewater Management, the Denver Zoo, the Stapleton Redevelopment Project, Parks & Recreation, the Department of Safety, the last remaining 1998 bond project, and the World Port Cargo Facility at DIA.

In Construction, the smallest prime contract amount analyzed was a \$4,000 construction project for Rosamond Park while the largest was the \$214 million Colorado Convention Center Expansion project. The median prime Construction project was valued at \$658,000. The average was \$3.6 million. In Professional Services, the smallest prime contract amount analyzed was a \$25,000 DIA contract for expert witness services while the largest was a \$47 million contract for construction remediation services in connection with the Stapleton Redevelopment Project. The median prime Professional Services project was valued at \$480,000. The average was \$1.7 million.

### **B. Product Market Definition**

Using the primary SIC codes assigned to each prime contractor and subcontractor in the Master Contract/Subcontract Database:

- We identified 42 distinct four-digit SIC codes in Construction which together account for 99 percent of all Construction expenditures;
- We identified 15 distinct four-digit SIC codes which together account for 99 percent of all Construction-Related Professional Services expenditures.

The relevant SIC codes and their associated dollar weights appear below in Tables 3.4 and 3.5, respectively. Although numerous industries play a role in Denver's construction and construction-related activities, actual contracting and subcontracting opportunities are in fact highly skewed.

In Construction, for example, we see from Table 3.4 that one industry (SIC 1542) accounts for almost half of the total, 5 industries account for three-fourths of the total, and 15 industries

## Defining the Relevant Markets

account for 90 percent of the total. The remaining 10 percent of construction expenditures are widely distributed across 24 additional industries.

For Construction-Related Professional Services (Table 3.5), we see an even more concentrated pattern—one industry (SIC 8711) accounts for more than 60 percent of expenditures, 3 industries account for 90 percent of the total, and the balance is distributed among 13 additional industries.

### C. Geographic Market Definition

To determine the geographic dimension of Denver’s contracting markets, we used the Master Contract/Subcontract Database, as described above in Section A, to obtain the zip codes and thereby the county and state for each identifiable contractor and subcontractor. Using this location information, we calculated the percentage of Denver contract and subcontract dollars awarded to businesses by state and county during the study period.

Contractors located in the State of Colorado account for the vast majority of Denver’s construction and construction-related professional services expenditures during the study period.<sup>129</sup> As shown in Table 3.6, almost 95 percent of Construction and almost 88 percent of Professional Services expenditures were awarded to contractors or subcontractors located in Colorado. These figures fall slightly if the geographic market is restricted to the Denver-Boulder-Greeley Metropolitan Statistical Area (MSA). For purposes of this Study, we define the primary geographic market area to be the State of Colorado.

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<sup>129</sup> After Colorado, other important states were California, Texas, Utah, and Kansas.

**D. Tables**

**Table 3.1. Summary of Master Contract/Subcontract Database: Prime Contracts and Subcontracts by Project Type**

CONTRACT CATEGORY	NUMBER OF CONTRACTS	DOLLARS
<i>CONSTRUCTION</i>		<i>\$1,439,914,142</i>
<i>Prime Contracts</i>	402	<i>\$1,021,358,775</i>
<i>Subcontracts</i>	2,266	<i>\$418,555,367</i>
<i>CONSTRUCTION-RELATED PROFESSIONAL SERVICES</i>		<i>\$239,158,064</i>
<i>Prime Contracts</i>	141	<i>\$179,994,642</i>
<i>Subcontracts</i>	428	<i>\$59,163,962</i>
<i>GRAND TOTAL</i>		<i>\$1,679,072,746</i>

Source: NERA calculations from Master Contract/Subcontract Database. Note: Prime Contract dollar amounts are net of all subcontract amounts.

## Defining the Relevant Markets

**Table 3.2. Summary of Denver Master Contract/Subcontract Database: Prime Contracts by Year of Award**

<b>YEAR OF AWARD</b>	<b>NUMBER OF PRIME CONTRACTS</b>	<b>DOLLARS</b>
<i>CONSTRUCTION</i>	402	<i>\$1,439,914,154</i>
2000	40	191,437,378
2001	138	570,343,092
2002	88	217,472,790
2003	73	334,220,004
2004	54	113,606,966
2005	9	12,833,924
<i>PROFESSIONAL SERVICES</i>	141	<i>\$239,158,589</i>
2000	17	84,261,807
2001	39	37,773,591
2002	25	51,609,042
2003	32	45,549,161
2004	27	19,734,988
2005	1	230,000

Source: NERA calculations from Master Contract/Subcontract Database.

## Defining the Relevant Markets

**Table 3.3. Summary of Denver Master Contract/Subcontract Database: Prime Contracts by Division**

DIVISION	NUMBER OF PRIME CONTRACTS	DOLLARS
<i>CONSTRUCTION</i>	402	\$1,439,914,154
DESIGN AND CONSTRUCTION MANAGEMENT	62	558,304,106
DENVER INTERNATIONAL AIRPORT	63	527,895,938
TRANSPORTATION	93	72,924,566
N/A	55	64,696,659
DENVER ART MUSEUM	2	62,109,492
ENGINEERING	51	48,341,810
WASTEWATER MANAGEMENT	36	35,377,274
ZOO	1	23,917,568
STAPLETON REDEVELOPMENT	10	12,415,972
PARKS & RECREATION	22	12,218,010
DEPARTMENT OF SAFETY	1	7,618,190
1998 BOND OFFICE	1	7,164,627
WORLD PORT DIA CARGO FACILITY	5	6,929,941
<i>PROFESSIONAL SERVICES</i>	141	\$239,158,589
DENVER INTERNATIONAL AIRPORT	91	147,416,918
STAPLETON REDEVELOPMENT	2	48,701,561
DESIGN AND CONSTRUCTION MANAGEMENT DIVIS	15	17,945,986
HOTEL AUTHORITY	1	8,930,802
WASTEWATER MANAGEMENT DIVISION	9	5,104,504
PARKS & RECREATION	7	3,677,635
ENGINEERING	10	3,365,685
TRANSPORTATION DIVISION	4	3,055,499
ENVIRONMENTAL SERVICES	2	960,000

Source: NERA calculations from Master Contract/Subcontract Database. Note: "N/A" indicates that no division assignment was recorded in the contracting records examined.

## Defining the Relevant Markets

**Table 3.4. Product Market for Denver Construction Contracts and Subcontracts**

SIC Code	SIC Description	Percentage	Cumulative Percentage
1542	Nonresidential Construction, n.e.c.	45.94	0.46
1611	Highway and Street Construction	16.77	0.63
1731	Electrical Work	5.63	0.68
1771	Concrete Work	4.27	0.73
1711	Plumbing, Heating, and Air Conditioning	3.06	0.76
8711	Engineering Services	2.48	0.78
1622	Bridge, Tunnel, and Elevated Highway	2.20	0.80
1623	Water, Sewer, and Utility Lines	1.97	0.82
1629	Heavy Construction, n.e.c.	1.76	0.84
1799	Special Trade Contractors, n.e.c.	1.63	0.86
5063	Electrical Apparatus and Equipment, Wiring Supplies, and Construction Materials	0.98	0.87
1794	Excavation Work	0.97	0.88
5051	Metals Service Centers and Offices	0.91	0.89
4953	Refuse Systems	0.89	0.89
1761	Roofing, Siding, and Sheet Metal Work	0.87	0.90
3441	Fabricated Structural Metal	0.80	0.91
1791	Structural Steel Erection	0.75	0.92
1742	Plastering, Dry Wall, and Insulation	0.71	0.93
1781	Water Well Drilling	0.70	0.93
3273	Ready-Mixed Concrete	0.54	0.94
5032	Brick, Stone, and Related Construction Materials	0.49	0.94
0782	Lawn and Garden Services	0.49	0.95
4212	Local Trucking Without Storage	0.49	0.95
1442	Construction Sand and Gravel	0.47	0.96
3272	Concrete Products, n.e.c.	0.43	0.96
1741	Masonry and Other Stonework	0.42	0.97
8712	Architectural Services	0.33	0.97
1541	Industrial Buildings and Warehouses	0.28	0.97
1795	Wrecking and Demolition Work	0.28	0.97
1752	Floor Laying and Floor Work, n.e.c.	0.27	0.98
1721	Painting	0.25	0.98

## Defining the Relevant Markets

SIC Code	SIC Description	Percentage	Cumulative Percentage
1751	Carpentry Work	0.23	0.98
3993	Signs and Advertising Displays	0.23	0.98
5039	Construction Materials, n.e.c.	0.23	0.99
8713	Surveying Services	0.20	0.99
1793	Glass and Glazing Work	0.17	0.99
8741	Management Services	0.17	0.99
1743	Terrazzo, Tile, Marble, and Mosaic Work	0.16	0.99
5074	Plumbing and Heating Equipment and Supplies	0.16	1.00
7359	Equipment Rental and Leasing, n.e.c.	0.15	1.00
4213	Trucking, Except Local	0.14	1.00
5031	Lumber, Plywood, Millwork, and Wood Panels	0.14	1.00

Source: NERA calculations from Denver Master Contract/Subcontract Database.

## Defining the Relevant Markets

**Table 3.5. Product Market for Denver Construction-Related Professional Services Contracts and Subcontracts**

<b>SIC Code</b>	<b>SIC Description</b>	<b>Percentage</b>	<b>Cumulative Percentage</b>
8711	Engineering Services	60.18	0.60
8712	Architectural Services	20.15	0.80
8741	Management Services	11.69	0.92
0781	Landscape Counseling and Planning	2.05	0.94
1799	Special Trade Contractors, n.e.c.	0.99	0.95
5065	Electronic Parts and Equipment, n.e.c.	0.98	0.96
1731	Electrical Work	0.87	0.97
4212	Local Trucking Without Storage	0.65	0.98
8734	Testing Laboratories	0.49	0.98
1542	Nonresidential Construction, n.e.c.	0.48	0.99
1629	Heavy Construction, n.e.c.	0.33	0.99
1794	Excavation Work	0.30	0.99
0782	Lawn and Garden Services	0.29	0.99
3993	Signs and Advertising Displays	0.28	1.00
8713	Surveying Services	0.27	1.00

Source: NERA calculations from Denver Master Contract/Subcontract Database.

## Defining the Relevant Markets

**Table 3.6. Distribution of Denver Contract Dollars by Contract Category**

<b>Location</b>	<b>Construction (%)</b>	<b>Professional Services (%)</b>
Inside Colorado	94.8%	87.9%
Outside Colorado	5.2%	12.1%
Inside Denver-Boulder-Greeley Metropolitan Statistical Area	92.5%	87.3%
Outside Denver-Boulder-Greeley Metropolitan Statistical Area	7.5%	12.7%

Source: NERA calculations from Denver Master Contract/Subcontract Database.



### IV. M/W/DBE Availability in Denver's Market Place

#### A. Identifying Businesses in the Relevant Markets

M/W/DBE availability (unweighted) is defined as the number of M/W/DBEs divided by the total number of businesses in the City and County of Denver's contracting market area.<sup>130</sup> Determining the total number of businesses in the relevant markets is more straightforward than determining the number of minority- or women-owned businesses in those markets. The latter task has three main parts: (1) identify all listed M/W/DBEs in the relevant market; (2) verify the ownership status of listed M/W/DBEs; and (3) estimate the number of unlisted M/W/DBEs in the relevant market. This section describes how these tasks were accomplished for Denver.

##### 1. Estimate the Total Number of Businesses in the Market

We used Dun & Bradstreet's *MarketPlace* database to determine the total number of businesses operating in the relevant geographic and product markets (these markets were discussed in the previous section). *MarketPlace* is a comprehensive database of U. S. businesses. This database, which contains over 13 million records, is updated continuously, and Dun & Bradstreet issues a revised version each quarter. For this Study, we used data for the third quarter of 2005. Each record in *MarketPlace* represents a business and includes the company name, address, telephone number, primary four-digit SIC code, secondary SIC code(s) (if any), business type, DUNS Number (a unique number assigned to each business by Dun & Bradstreet) and other descriptive information. Dun & Bradstreet gathers and verifies information from many different sources. These sources include annual management interviews, payment experiences, bank account information, filings for suits, liens, judgments and bankruptcies, news items, the U. S. Postal Service, utility and telephone service, business registrations, corporate charters, Uniform Commercial Code filings, and records of the Small Business Administration and other governmental agencies.

We used the *MarketPlace* database to identify the total number of businesses in each four-digit SIC code to which we had anticipated assigning a product market weight. Table 4.1 shows the number of businesses identified in each SIC code relevant to Denver's Construction projects, along with the associated dollar-based industry weight. Comparable data for Professional Services and Concessions appears in Tables 4.2 and 4.3, respectively.<sup>131</sup>

##### 2. Identify Listed M/W/DBEs

While extensive, *MarketPlace* does not adequately identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in *MarketPlace*, experience has demonstrated that many more are missed. For this reason, several additional steps were required to identify the appropriate percentage of M/W/DBEs in the relevant market.

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<sup>130</sup>To yield a percentage, the resulting figure is multiplied by 100.

<sup>131</sup> Industry weights for Concessions were calculated using DIA figures on Gross Reportable Revenue by Concessionaire for the October 2003-September 2004 period.

## M/W/DBE Availability in Denver's Market Place

First, NERA completed an intensive regional search for information on minority-owned and woman-owned businesses in the City and County of Denver and surrounding areas. Beyond the information already in *MarketPlace*, NERA collected lists of M/W/DBEs from CDOT as well as other public and private entities in and surrounding the City and County of Denver. Specifically, directories were included from: City of Denver's Division of Small Business Opportunity (DSBO), Regional Transportation District of Denver, CDOT UCP DBE Program, CDOT Emerging Small Business Program, Colorado Office of Economic Development and International Trade Minority Business Office, Colorado Women's Chamber of Commerce, Rocky Mountain Indian Chamber of Commerce, Hispanic Contractors of Colorado, Asian Chamber of Commerce, African American Construction Council (NAMC), Central Contractor Registration, Diversity Information Resources, Business Research Services, National Association of Women Business Owners-Denver, Small Business Association Dynamic Small Business Search, Colorado Springs Hispanic Chamber of Commerce, and the Latino Chamber of Commerce-Pueblo, CO.

We will refer to the M/W/DBE businesses identified in this manner as “listed” M/W/DBEs. Tables 4.4–4.6 provide the total number of listed M/W/DBEs by SIC code for Construction, Professional Services, and Concessions, respectively.<sup>132</sup>

If the listed M/W/DBEs identified in these tables are *all* in fact M/W/DBEs and are the *only* M/W/DBEs among all the businesses identified in Tables 4.1-4.3, then an estimate of “listed” M/W/DBE availability is simply the number of listed M/W/DBEs (taken from Tables 4.4–4.6, respectively) divided by the total number of businesses in the relevant market (taken from Tables 4.1-4.3, respectively). However, as we shall see below neither of these two conditions holds true and therefore this is not an appropriate method for measuring M/W/DBE availability.

For two reasons, the percentages directly derivable from these tables are not suitable as availability measures. First, it is likely that some proportion of the M/W/DBEs listed in the tables are not actually minority-owned or woman-owned. Second, it is likely that there are additional “unlisted” M/W/DBEs among all the businesses included in Tables 4.1-4.3. Such businesses do not appear in any of the directories we gathered and are therefore not included as M/W/DBEs in Tables 4.4-4.6. Additional steps were required to test these two conditions and to arrive at a more accurate representation of M/W/DBE availability in the Denver market place. We discuss these steps in Sections 3.A and 3.B below.

### 3. Verify Listed M/W/DBEs and Estimate Unlisted M/W/DBEs

It is likely that information on M/W/DBEs from *MarketPlace* and other M/W/DBE directories is not correct in all instances. Phenomena such as ownership changes, associate or mentor status, recording errors, or even outright misrepresentation could lead to businesses being listed as M/W/DBEs in a particular directory even though they are actually owned by White males. Other things equal, this type of error would cause our availability estimate to be biased upward from the actual availability number.

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<sup>132</sup> The industry weights appearing in Tables 4.6-4.9 are identical to those in Tables 4.1-4.4, respectively.

## M/W/DBE Availability in Denver's Market Place

The second likelihood that must be addressed is that not all M/W/DBEs are necessarily listed—either in *MarketPlace* or in any of the other directories we collected. Such phenomena as geographic relocation, ownership changes, directory compilation errors, and limitations in M/W/DBE outreach could all lead to M/W/DBEs being unlisted. Other things equal, this type of error would cause our availability estimate to be biased downward from the actual availability number.

In our experience, we have found that both types of bias are not uncommon. For this Study, we attempted to correct for the effect of these biases using statistical sampling procedures. We surveyed a large stratified random sample of 1,447 relevant businesses by telephone and measured how often they were misclassified (or unclassified) by race and/or sex.<sup>133</sup>

Strata were defined according to SIC code groups and listed M/W/DBE status.<sup>134</sup> The survey was conducted by telephone during October and November 2005. Up to 10 attempts were made to reach each business and speak with an appropriate respondent. Attempts were scheduled for a mix of day and evening, weekdays and weekends, and appointments were scheduled for callbacks when necessary. Of the 1,447 firms in our sample, 752 were listed M/W/DBEs and 695 were unclassified by race or sex. However, 255 establishments were excluded as “unable to contact.” These resulted primarily from telephone numbers that were disconnected or no longer in service, wrong telephone numbers. Of the remaining 1,192 firms, 625 were listed M/W/DBEs and the remaining 567 establishments were unclassified.

The first part of the survey tested whether our sample of listed M/W/DBEs was correctly classified by race and/or sex. The second part of the survey tested whether the unclassified firms could all be properly classified as non-M/W/DBEs. Both elements of the survey are described in more detail below.

### a. Survey of Listed M/W/DBEs

We selected a stratified random sample of 752 listed M/W/DBEs to verify the race and gender status of their owner(s). Of these, 127 (16.9%) were excluded as “unable to contact.” Of the 625 remaining establishments, we obtained complete interviews from 472, for a response rate of 75.5 percent.

Of the 472 establishments interviewed, 111 (23.5%) were owned by White males. The amount of misclassification was substantial in every SIC stratum, and was highest in Other Construction-Related Goods and Services and General Building Construction Contractors, as shown in Table 4.7. Misclassification varied by putative race and sex as well, and was highest among apparent

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<sup>133</sup> A similar methodology has also been employed by the Federal Reserve Board to deal with similar problems in designing and implementing the National Surveys of Small Business Finances for 1993 and 1998. See Catherine Haggerty, et al. (2000).

<sup>134</sup> Six separate industry strata were created—three for construction, one for architecture and engineering, one for construction-related goods and services, and one concessions-related goods and services. All six strata were then split according to listed M/W/DBE status to create a total of 12 strata. Generally, listed M/W/DBEs were sampled at a higher rate (in some cases with certainty) than unclassified establishments.

## M/W/DBE Availability in Denver's Market Place

White female firms and among apparent minority firms of unknown race, as shown in Table 4.8.<sup>135</sup>

The race and gender status of the listed M/W/DBEs responding to the survey was changed, if necessary, according to the survey results. For example, if a business originally listed as a White female M/W/DBE was actually owned by a White male, then that business was counted as a White male for purposes of calculating M/W/DBE availability. But what about the remaining putative White female-owned establishments that we did not interview? For these businesses, we must estimate their M/W/DBE status since we did not directly obtain it (because we did not interview them). We base our estimates on the amount of misclassification we observed among the White female-owned firms that we succeeded in interviewing. In this example, our interviews show that 64.9 percent of these firms are actually White female-owned, 22.4 percent are actually White male-owned, and 12.7 percent are actually minority-owned. Therefore, we assign each of the remaining putative White female firms a 64.9 percent probability of actually being White female-owned, a 22.4 percent probability of actually being White male-owned, and a 12.7 percent probability of being minority-owned. We repeated this procedure within each sample stratum and for all putative race and sex categories.

### b. Survey of Unclassified Businesses

In a manner exactly analogous to our survey of listed M/W/DBEs, in the second part of our survey we examined unclassified businesses, *i.e.* any business that was not originally identified as a M/W/DBE, either in *MarketPlace* or in one or more of the other directories collected for this Study.

We selected a stratified random sample of 2,250 unclassified businesses to verify the race and gender status of their owner(s). Of these, 450 (20.0%) were excluded as “unable to contact.” Of the 1,800 remaining establishments, we obtained 1,176 complete interviews, for a response rate of 65.3 percent.

Of the 1,176 establishments interviewed, 986 (83.8%) were owned by White males, 91 (7.7%) by White females, and 99 (8.5%) by minorities. A similar phenomenon was observed within each industry stratum, as shown in Table 4.9.

As with the survey of listed M/W/DBEs, the race and gender status of unclassified businesses was changed, if necessary, according to the survey results. For example, if an interviewed business that was originally unclassified indicated that it was actually owned by a White male, then that business was counted as a White male for purposes of the M/W/DBE availability calculation. If it indicated it was White female-owned, it was counted as White female, and so on. For unclassified businesses that were not interviewed, we assigned probability values (probability actually White male-owned, probability actually White female-owned, probability actually Black-owned, etc.) based on the interview responses. We again carried out the probability assignment procedure within each stratum.

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<sup>135</sup> By “putative,” we mean the race and sex that we initially assigned to each firm based on the information provided by Dun & Bradstreet or by our master MBE directory.

## M/W/DBE Availability in Denver's Market Place

Clearly, a very large majority of unclassified businesses (almost 84 percent overall) are White male-owned. Nevertheless, almost 16 percent were *not* White male-owned. Of the latter, the largest group was owned by White females, with descending size shares accounted for by Blacks, Hispanics, Asians, and Native Americans. Table 4.10 shows the actual survey results by race and sex.

### **B. Estimates of M/W/DBE Availability by Detailed Race, Sex, and Industry**

Tables 4.11 through 4.16 present M/W/DBE availability percentages for Denver's relevant markets by Major Group ("two-digit SIC"), Industry Group ("three-digit SIC"), and Industry ("four-digit SIC"), based on the estimation methodology described above in Section IV.A. Average estimates for the City and County of Denver as a whole, overall and by major procurement category, are also presented.

In Construction, overall weighted M/W/DBE availability is estimated to be 21.9 percent. White women-owned firms have estimated availability of 12.8 percent. Hispanic-owned firms have estimated availability of 5.6 percent. For Black-owned firms, the figure is 1.2 percent. For Asian-owned firms and Native American-owned firms the figures are 1.4 percent and 1.0 percent, respectively.

In Professional Services, overall weighted M/W/DBE availability is estimated to be 15.0 percent. White women-owned firms have estimated availability of 10.3 percent. Hispanic-owned firms have estimated availability of 2.6 percent. For Black-owned firms, the figure is 0.4 percent. For Asian-owned firms and Native American-owned firms the figures are 1.4 percent and 0.3 percent, respectively.

Table 4.17 presents comparable M/W/DBE availability percentages for DIA Concessions at the four-digit SIC industry-level as well as overall weighted figures. Dollar-based industry weights for Concessions were calculated using DIA figures on Gross Reportable Revenue by Concessionaire for the October 2003-September 2004 period.

Tables 4.11 through 4.17 also include comparable availability figures for Small Businesses, defined according to the size standards promulgated by the U.S. Small Business Administration.<sup>136</sup> For certain industries, the size standard is based on threshold values for annual revenues. For others, the standard is based on number of employees. The vast majority of businesses qualify as small under the federal standards, therefore availability numbers in this category are

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<sup>136</sup> Detailed size standard information is available from <http://www.sba.gov/size/hist/siccodes-stds.html>.

## M/W/DBE Availability in Denver's Market Place

### C. Tables

**Table 4.1. Construction—Number of Businesses and Industry Weight, by SIC Code**

SIC Code	SIC Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
1542	Nonresidential Construction, n.e.c.	1,284	45.94	0.46
1611	Highway and Street Construction	457	16.77	0.63
1731	Electrical Work	2,319	5.63	0.68
1771	Concrete Work	1,142	4.27	0.73
1711	Plumbing, Heating, and Air Conditioning	3,182	3.06	0.76
8711	Engineering Services	2,564	2.48	0.78
1622	Bridge, Tunnel, and Elevated Highway	27	2.20	0.80
1623	Water, Sewer, and Utility Lines	314	1.97	0.82
1629	Heavy Construction, n.e.c.	355	1.76	0.84
1799	Special Trade Contractors, n.e.c.	2,341	1.63	0.86
5063	Electrical Apparatus and Equipment, Wiring Supplies, and Construction Materials	491	0.98	0.87
1794	Excavation Work	1,183	0.97	0.88
5051	Metals Service Centers and Offices	181	0.91	0.89
4953	Refuse Systems	359	0.89	0.89
1761	Roofing, Siding, and Sheet Metal Work	1,115	0.87	0.90
3441	Fabricated Structural Metal	141	0.80	0.91
1791	Structural Steel Erection	104	0.75	0.92
1742	Plastering, Dry Wall, and Insulation	855	0.71	0.93
1781	Water Well Drilling	137	0.70	0.93
3273	Ready-Mixed Concrete	123	0.54	0.94
5032	Brick, Stone, and Related Construction Materials	309	0.49	0.94
0782	Lawn and Garden Services	1,480	0.49	0.95
4212	Local Trucking Without Storage	1,750	0.49	0.95
1442	Construction Sand and Gravel	35	0.47	0.96
3272	Concrete Products, n.e.c.	88	0.43	0.96
1741	Masonry and Other Stonework	576	0.42	0.97
8712	Architectural Services	1,159	0.33	0.97
1541	Industrial Buildings and Warehouses	216	0.28	0.97
1795	Wrecking and Demolition Work	42	0.28	0.97

## M/W/DBE Availability in Denver's Market Place

SIC Code	SIC Description	Number of Estab- lishments	Industry Weight	Industry Weight (Cumulative)
1752	Floor Laying and Floor Work, n.e.c.	739	0.27	0.98
1721	Painting	1,843	0.25	0.98
1751	Carpentry Work	1,193	0.23	0.98
3993	Signs and Advertising Displays	456	0.23	0.98
5039	Construction Materials, n.e.c.	138	0.23	0.99
8713	Surveying Services	305	0.20	0.99
1793	Glass and Glazing Work	154	0.17	0.99
8741	Management Services	169	0.17	0.99
1743	Terrazzo, Tile, Marble, and Mosaic Work	480	0.16	0.99
5074	Plumbing and Heating Equipment and Supplies	272	0.16	1.00
7359	Equipment Rental and Leasing, n.e.c.	1,034	0.15	1.00
4213	Trucking, Except Local	827	0.14	1.00
5031	Lumber, Plywood, Millwork, and Wood Panels	463	0.14	1.00
TOTAL		32,402		

## M/W/DBE Availability in Denver's Market Place

**Table 4.2. Professional Services—Number of Businesses and Industry Weight, by SIC Code**

SIC Code	SIC Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
8711	Engineering Services	2,564	60.18	0.60
8712	Architectural Services	1,159	20.15	0.80
8741	Management Services	169	11.69	0.92
0781	Landscape Counseling and Planning	931	2.05	0.94
1799	Special Trade Contractors, n.e.c.	2,341	0.99	0.95
5065	Electronic Parts and Equipment, n.e.c.	524	0.98	0.96
1731	Electrical Work	2,319	0.87	0.97
4212	Local Trucking Without Storage	1,750	0.65	0.98
8734	Testing Laboratories	226	0.49	0.98
1542	Nonresidential Construction, n.e.c.	1,284	0.48	0.99
1629	Heavy Construction, n.e.c.	355	0.33	0.99
1794	Excavation Work	1,183	0.30	0.99
0782	Lawn and Garden Services	1,480	0.29	0.99
3993	Signs and Advertising Displays	456	0.28	1.00
8713	Surveying Services	305	0.27	1.00
	TOTAL	17,046		

## M/W/DBE Availability in Denver's Market Place

**Table 4.3. Concessions-Related Goods and Services—Number of Businesses and Industry Weight, by SIC Code**

SIC Code	SIC Description	Number of Estab- lishments	Industry Weight	Industry Weight (Cumulative)
5812	Eating Places	7,800	37.24	37.24
5813	Drinking Places	336	14.05	51.29
5994	News Dealers and Newsstands	28	12.38	63.67
6099	Functions Related to Deposit Banking	327	5.93	69.6
5399	Miscellaneous General Merchandise Stores	261	3.85	73.45
5942	Book Stores	599	3.29	76.74
5947	Gift, Novelty, and Souvenir Shops	2,075	3.00	79.74
7311	Advertising Agencies	601	2.65	82.39
4899	Communications Services, NEC	339	1.94	84.33
5541	Gasoline Service Stations	1,365	1.66	85.99
5699	Miscellaneous Apparel and Accessory Stores	859	1.50	87.49
5731	Radio, TV, & Consumer Elec. Stores	457	1.46	88.95
5441	Candy, Nut, and Confectionery Stores	171	1.42	90.37
5632	Women's Accessory and Specialty Stores	179	1.34	91.71
5948	Luggage and Leather Goods Stores	67	1.25	92.96
8412	Museums and Art Galleries	156	1.22	94.18
5944	Jewelry Stores	898	1.07	95.25
6061/6062	Credit Unions	251	1.03	96.28
7299	Personal Services	1,978	0.99	97.27
5945	Hobby, Toy, and Game Shops	679	0.79	98.06
7841	Video Tape Rental	213	0.54	98.6
5999	Miscellaneous Retail Stores, n.e.c.	70	0.51	99.11
5611	Men's and Boys' Clothing Stores	299	0.35	99.46
7251	Shoe Repair Shops and Shoeshine Parlors	12	0.29	99.75
5621	Women's Clothing Stores	871	0.10	99.85
7231	Beauty Shops	3,971	0.10	99.95
7241	Barber Shops	441	0.05	100.00
TOTAL		25,303		

## M/W/DBE Availability in Denver's Market Place

**Table 4.4. Construction—Listed M/W/DBEs and Industry Weight, by SIC Code**

SIC Code	SIC Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
1542	Nonresidential Construction, n.e.c.	107	45.94	0.46
1611	Highway and Street Construction	53	16.77	0.63
1731	Electrical Work	225	5.63	0.68
1771	Concrete Work	125	4.27	0.73
1711	Plumbing, Heating, and Air Conditioning	199	3.06	0.76
8711	Engineering Services	304	2.48	0.78
1622	Bridge, Tunnel, and Elevated Highway	3	2.20	0.80
1623	Water, Sewer, and Utility Lines	30	1.97	0.82
1629	Heavy Construction, n.e.c.	36	1.76	0.84
1799	Special Trade Contractors, n.e.c.	217	1.63	0.86
5063	Electrical Apparatus and Equipment, Wiring Supplies, and Construction Materials	47	0.98	0.87
1794	Excavation Work	85	0.97	0.88
5051	Metals Service Centers and Offices	16	0.91	0.89
4953	Refuse Systems	32	0.89	0.89
1761	Roofing, Siding, and Sheet Metal Work	70	0.87	0.90
3441	Fabricated Structural Metal	8	0.80	0.91
1791	Structural Steel Erection	15	0.75	0.92
1742	Plastering, Dry Wall, and Insulation	47	0.71	0.93
1781	Water Well Drilling	11	0.70	0.93
3273	Ready-Mixed Concrete	4	0.54	0.94
5032	Brick, Stone, and Related Construction Materials	23	0.49	0.94
0782	Lawn and Garden Services	136	0.49	0.95
4212	Local Trucking Without Storage	175	0.49	0.95
1442	Construction Sand and Gravel	9	0.47	0.96
3272	Concrete Products, n.e.c.	11	0.43	0.96
1741	Masonry and Other Stonework	38	0.42	0.97
8712	Architectural Services	150	0.33	0.97
1541	Industrial Buildings and Warehouses	14	0.28	0.97
1795	Wrecking and Demolition Work	13	0.28	0.97
1752	Floor Laying and Floor Work, n.e.c.	41	0.27	0.98
1721	Painting	189	0.25	0.98

## M/W/DBE Availability in Denver's Market Place

SIC Code	SIC Description	Number of Estab- lishments	Industry Weight	Industry Weight (Cumulative)
1751	Carpentry Work	62	0.23	0.98
3993	Signs and Advertising Displays	84	0.23	0.98
5039	Construction Materials, n.e.c.	9	0.23	0.99
8713	Surveying Services	31	0.20	0.99
1793	Glass and Glazing Work	30	0.17	0.99
8741	Management Services	34	0.17	0.99
1743	Terrazzo, Tile, Marble, and Mosaic Work	26	0.16	0.99
5074	Plumbing and Heating Equipment and Supplies	17	0.16	1.00
7359	Equipment Rental and Leasing, n.e.c.	106	0.15	1.00
4213	Trucking, Except Local	93	0.14	1.00
5031	Lumber, Plywood, Millwork, and Wood Panels	37	0.14	1.00
TOTAL		2,962		

## M/W/DBE Availability in Denver's Market Place

**Table 4.5. Professional Services—Listed M/W/DBEs and Industry Weight, by SIC Code**

SIC Code	SIC Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
8711	Engineering Services	304	60.18	0.60
8712	Architectural Services	150	20.15	0.80
8741	Management Services	34	11.69	0.92
0781	Landscape Counseling and Planning	144	2.05	0.94
1799	Special Trade Contractors, n.e.c.	217	0.99	0.95
5065	Electronic Parts and Equipment, n.e.c.	59	0.98	0.96
1731	Electrical Work	225	0.87	0.97
4212	Local Trucking Without Storage	175	0.65	0.98
8734	Testing Laboratories	39	0.49	0.98
1542	Nonresidential Construction, n.e.c.	107	0.48	0.99
1629	Heavy Construction, n.e.c.	36	0.33	0.99
1794	Excavation Work	85	0.30	0.99
0782	Lawn and Garden Services	136	0.29	0.99
3993	Signs and Advertising Displays	84	0.28	1.00
8713	Surveying Services	31	0.27	1.00
TOTAL		1,826		

## M/W/DBE Availability in Denver's Market Place

**Table 4.6. Concessions-Related Goods and Services—Number of Listed D/M/DBEs, by SIC Code**

SIC Code	SIC Description	Number of Estab- lishments	Industry Weight	Industry Weight (Cumulative)
5812	Eating Places	983	37.24	37.24
5813	Drinking Places	43	14.05	51.29
5994	News Dealers and Newsstands	3	12.38	63.67
6099	Functions Related to Deposit Banking	20	5.93	69.6
5399	Miscellaneous General Merchandise Stores	38	3.85	73.45
5942	Book Stores	117	3.29	76.74
5947	Gift, Novelty, and Souvenir Shops	652	3.00	79.74
7311	Advertising Agencies	136	2.65	82.39
4899	Communications Services, NEC	24	1.94	84.33
5541	Gasoline Service Stations	87	1.66	85.99
5699	Miscellaneous Apparel and Accessory Stores	220	1.50	87.49
5731	Radio, TV, & Consumer Elec. Stores	28	1.46	88.95
5441	Candy, Nut, and Confectionery Stores	30	1.42	90.37
5632	Women's Accessory and Specialty Stores	59	1.34	91.71
5948	Luggage and Leather Goods Stores	7	1.25	92.96
8412	Museums and Art Galleries	3	1.22	94.18
5944	Jewelry Stores	177	1.07	95.25
6061/6062	Credit Unions	0	1.03	96.28
7299	Personal Services	518	0.99	97.27
5945	Hobby, Toy, and Game Shops	191	0.79	98.06
7841	Video Tape Rental	27	0.54	98.6
5999	Miscellaneous Retail Stores, n.e.c.	12	0.51	99.11
5611	Men's and Boys' Clothing Stores	33	0.35	99.46
7251	Shoe Repair Shops and Shoeshine Parlors	6	0.29	99.75
5621	Women's Clothing Stores	242	0.10	99.85
7231	Beauty Shops	1,885	0.10	99.95
7241	Barber Shops	114	0.05	100.00
TOTAL		5,655		

## M/W/DBE Availability in Denver's Market Place

**Table 4.7. Listed M/W/DBE Survey—Amount of Misclassification, by SIC Code Grouping**

<b>Listed M/W/DBE By SIC Code Grouping</b>	<b>Misclassification (Percentage White Male)</b>	<b>Percentage Actually M/W/DBE-owned</b>	<b>Number of Businesses Interviewed</b>
SIC 15	27.8	72.2	72
SIC 16	15.5	84.5	71
SIC 17	26.5	73.5	83
SIC 8711-8712	20.4	79.6	93
Other Construction- Related Goods & Services	29.5	70.5	78
Concessions-Related Goods & Services	21.3	78.7	75
All Industries	23.5	76.5	472

Source: NERA telephone surveys conducted in October–November 2005.

Note: SIC 15 – Building Construction, SIC 16 – Heavy Construction, SIC 17 – Special Trades Construction, SIC 8711-8712 – Architecture and Engineering.

## M/W/DBE Availability in Denver's Market Place

**Table 4.8. Listed M/W/DBE Survey—Amount of Misclassification, by Putative M/W/DBE Type**

Putative Race/Sex	Misclassification (Percentage White Male)	Misclassification (Percentage Other M/W/DBE Type)	Percentage Correctly Classified	Number of Businesses Interviewed
Black (either sex)	16.0	12.0	72.0	25
Hispanic (either sex)	17.7	8.1	74.2	124
Asian (either sex)	24.0	12.0	64.0	50
Native American (either sex)	23.3	3.4	73.3	30
Unknown Minority (either sex)	45.5	54.5	N/A	22
White Female	25.3	6.4	68.3	221
All M/W/DBE Types	23.5	N/A	76.5	472

Source and Notes: See Table 4.7.

## M/W/DBE Availability in Denver's Market Place

**Table 4.9. Unclassified Businesses Survey —By SIC Code Grouping**

<b>Listed M/W/DBE By SIC Code Grouping</b>	<b>Percentage Actually White Male-owned</b>	<b>Percentage M/W/DBE</b>	<b>Number of Businesses Interviewed</b>
SIC 15	83.6	16.4	67
SIC 16	90.8	9.2	65
SIC 17	77.8	22.2	54
SIC 8711-8712	94.2	5.8	69
Other Construction- Related Goods & Services	91.4	8.6	70
Concessions-Related Goods & Services	66.7	33.3	66
All Industries	84.4	15.6	391

Source: NERA telephone surveys conducted in October–November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.10. Unclassified Businesses Survey—By Race and Sex**

Verified Race/Sex	Number of Businesses Interviewed	Percentage of Total
White Male	330	84.4
White Female	37	9.5
Black	1	0.3
Hispanic	14	3.6
Asian	7	1.8
Native American	2	0.5
Statewide	391	100.0

Source: See Table 4.7. Note: Percentages may not sum to 100 because of rounding.

## M/W/DBE Availability in Denver's Market Place

**Table 4.11. Construction—Detailed M/W/DBE Availability by Major Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
General building contractors (SIC 15)	1.96	5.54	0.27	0.61	12.74	21.12	78.88	97.68
Heavy construction, except building (SIC 16)	0.52	4.35	0.36	0.66	11.60	17.50	82.50	97.03
Special trade contractors (SIC 17)	0.44	6.90	3.50	1.98	14.08	26.89	73.11	99.08
Engineering and management services (SIC 87)	0.44	2.46	1.23	0.31	10.38	14.83	85.17	96.47
Wholesale trade--durable goods (SIC 50)	0.30	4.19	0.20	0.23	9.13	14.06	85.94	98.45
Stone, clay, glass, and concrete product (SIC 32)	0.00	3.93	0.00	0.18	9.04	13.15	86.85	99.04
Electric, gas, and sanitary services (SIC 49)	0.28	3.04	0.50	0.28	9.77	13.87	86.13	97.34
Fabricated metal products (SIC 34)	0.00	4.66	0.00	0.09	7.25	12.00	88.00	99.29
Trucking and warehousing (SIC 42)	0.67	4.48	0.14	0.22	9.69	15.20	84.80	99.56
Agricultural services (SIC 07)	0.27	3.71	0.08	0.24	9.74	14.05	85.95	99.31
Nonmetallic minerals, except fuels (SIC 14)	0.00	6.12	0.82	0.63	17.21	24.77	75.23	94.29
Miscellaneous manufacturing industries (SIC 39)	0.22	3.20	0.06	0.70	15.78	19.96	80.04	98.25
Business services (SIC 73)	0.19	3.13	0.11	0.27	11.22	14.92	85.08	97.30
<i>CONSTRUCTION</i>	<i>1.22</i>	<i>5.55</i>	<i>1.36</i>	<i>0.99</i>	<i>12.80</i>	<i>21.92</i>	<i>78.08</i>	<i>97.84</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.12. Professional Services—Detailed M/W/DBE Availability by Major Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	Small Business
Engineering and management services (SIC 87)	0.53	2.40	1.11	0.30	11.26	15.60	84.40	96.48
Agricultural services (SIC 07)	0.22	3.60	0.44	0.42	12.98	17.67	82.33	99.43
Special trade contractors (SIC 17)	0.43	6.49	3.51	1.99	14.40	26.81	73.19	99.27
Wholesale trade--durable goods (SIC 50)	0.57	3.65	0.54	0.50	10.34	15.60	84.40	97.71
Trucking and warehousing (SIC 42)	0.69	4.66	0.17	0.20	9.40	15.12	84.88	99.88
General building contractors (SIC 15)	1.96	5.54	0.27	0.60	12.75	21.13	78.87	97.67
Heavy construction, except building (SIC 16)	0.20	2.62	0.38	0.66	13.01	16.88	83.12	99.07
Miscellaneous manufacturing industries (SIC 39)	0.22	3.20	0.06	0.70	15.78	19.96	80.04	98.25
<i>PROFESSIONAL SERVICES</i>	<i>0.43</i>	<i>2.62</i>	<i>1.37</i>	<i>0.31</i>	<i>10.25</i>	<i>14.97</i>	<i>85.03</i>	<i>96.67</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.13. Construction—Detailed M/W/DBE Availability by Industry Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
General Bldg Contractors – Comm. (SIC 154)	1.96	5.54	0.27	0.61	12.74	21.12	78.88	97.68
Highway and Street Construction (SIC 161)	0.58	4.26	0.41	0.73	11.56	17.54	82.46	98.40
Other Heavy Construction (SIC 162)	0.34	4.62	0.22	0.46	11.73	17.37	82.63	93.17
Electrical Work (SIC 173)	0.54	6.61	3.43	1.90	14.56	27.04	72.96	98.71
Concrete Work (SIC 177)	0.47	8.63	3.51	2.03	13.23	27.87	72.13	99.09
Misc. Special Trades (SIC 179)	0.58	6.55	3.46	2.22	15.36	28.17	71.83	98.68
Plumbing, Heating & AC (SIC 171)	0.29	5.94	3.59	1.80	13.59	25.21	74.79	99.51
Engineering & Architect. Services (SIC 871)	0.39	2.47	1.29	0.30	9.97	14.42	85.58	96.57
Masonry & Stone Setting (SIC 174)	0.23	7.03	3.57	1.87	12.60	25.30	74.70	99.61
Electrical Goods (SIC 506)	0.20	3.33	0.20	0.24	10.48	14.46	85.54	98.78
Concrete, Gypsum & Plaster (SIC 327)	0.00	3.93	0.00	0.18	9.04	13.15	86.85	99.04
Metals & Minerals, exc. Petroleum (SIC 505)	0.55	5.13	0.26	0.25	8.44	14.63	85.37	97.79
Sanitary Services (SIC 495)	0.28	3.04	0.50	0.28	9.77	13.87	86.13	97.34
Roofing, Siding and Sheet Metal (SIC 176)	0.26	6.46	3.50	1.78	13.35	25.35	74.65	99.54
Lumber & Other Const. Materials (SIC 503)	0.19	4.46	0.16	0.21	8.30	13.33	86.67	98.84
Fabricated Structural Metal Products (SIC 344)	0.00	4.66	0.00	0.09	7.25	12.00	88.00	99.29

## M/W/DBE Availability in Denver's Market Place

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
Water Well Drilling (SIC 178)	0.18	5.69	3.48	2.25	14.56	26.17	73.83	100.00
Trucking & Courier Services (SIC 421)	0.67	4.48	0.14	0.22	9.69	15.20	84.80	99.56
Carpentry and Floor Work (SIC 175)	0.17	6.11	3.65	1.86	13.10	24.89	75.11	99.69
Landscape and Horticultural Services (SIC 078)	0.27	3.71	0.08	0.24	9.74	14.05	85.95	99.31
Sand and Gravel (SIC 144)	0.00	6.12	0.82	0.63	17.21	24.77	75.23	94.29
Painting and Paper Hanging (SIC 172)	0.34	6.73	3.41	1.92	14.88	27.28	72.72	100.00
Miscellaneous Manufacturing (SIC 399)	0.22	3.20	0.06	0.70	15.78	19.96	80.04	98.25
Management Services (SIC 874)	1.48	2.22	0.00	0.59	17.84	22.13	77.87	94.81
Hardware & Plumbing Eqpmt & Supplies (SIC 507)	0.00	2.66	0.12	0.25	9.18	12.20	87.80	98.16
Misc. Eqpmt Rental & Leasing (SIC 735)	0.19	3.13	0.11	0.27	11.22	14.92	85.08	97.30
<i>CONSTRUCTION</i>	<i>1.22</i>	<i>5.55</i>	<i>1.36</i>	<i>0.99</i>	<i>12.80</i>	<i>21.92</i>	<i>78.08</i>	<i>97.84</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.14. Professional Services—Detailed M/W/DBE Availability by Industry Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
Engineering & Architect. Services (SIC 871)	0.40	2.43	1.28	0.26	10.28	14.64	85.36	96.71
Management Services (SIC 874)	1.48	2.22	0.00	0.59	17.84	22.13	77.87	94.81
Landscape and Horticultural Services (SIC 078)	0.22	3.60	0.44	0.42	12.98	17.67	82.33	99.43
Misc. Special Trades (SIC 179)	0.35	6.40	3.56	2.04	14.30	26.65	73.35	99.64
Electrical Goods (SIC 506)	0.57	3.65	0.54	0.50	10.34	15.60	84.40	97.71
Electrical Work (SIC 173)	0.54	6.61	3.43	1.90	14.56	27.04	72.96	98.71
Trucking & Courier Services (SIC 421)	0.69	4.66	0.17	0.20	9.40	15.12	84.88	99.88
Research and Testing Services (SIC 873)	0.44	2.58	0.82	0.00	14.64	18.48	81.52	98.95
General Bldg Contractors – Comm. (SIC 154)	1.96	5.54	0.27	0.60	12.75	21.13	78.87	97.67
Other Heavy Construction (SIC 162)	0.20	2.62	0.38	0.66	13.01	16.88	83.12	99.07
Miscellaneous Manufacturing (SIC 399)	0.22	3.20	0.06	0.70	15.78	19.96	80.04	98.25
<i>PROFESSIONAL SERVICES</i>	<i>0.43</i>	<i>2.62</i>	<i>1.37</i>	<i>0.31</i>	<i>10.25</i>	<i>14.97</i>	<i>85.03</i>	<i>96.67</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.15. Construction—Detailed M/W/DBE Availability by Industry (Percentages)**

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	Small Business
Nonresidential Construction, n.e.c. (SIC 1542)	1.96	5.54	0.27	0.60	12.75	21.13	78.87	97.67
Highway and Street Construction (SIC 1611)	0.58	4.26	0.41	0.73	11.56	17.54	82.46	98.40
Electrical Work (SIC 1731)	0.54	6.61	3.43	1.90	14.56	27.04	72.96	98.71
Concrete Work (SIC 1771)	0.47	8.63	3.51	2.03	13.23	27.87	72.13	99.09
Plumbing, Heating, and Air Conditioning (SIC 1711)	0.29	5.94	3.59	1.80	13.59	25.21	74.79	99.51
Engineering Services (SIC 8711)	0.43	2.53	1.44	0.26	9.72	14.38	85.62	96.08
Bridge, Tunnel, and Elevated Highway (SIC 1622)	0.62	8.10	0.09	0.09	9.37	18.27	81.73	84.21
Water, Sewer, and Utility Lines (SIC 1623)	0.16	2.51	0.23	0.71	13.21	16.81	83.19	97.93
Heavy Construction, n.e.c. (SIC 1629)	0.20	2.62	0.38	0.66	13.01	16.88	83.12	99.07
Special Trade Contractors, n.e.c. (SIC 1799)	0.39	6.44	3.57	2.07	14.37	26.84	73.16	99.64
Electrical Apparatus and Equipment, Wiring Supplies, and Construction Materials	0.20	3.33	0.20	0.24	10.48	14.46	85.54	98.78
Excavation Work (SIC 1794)	0.23	6.27	3.51	1.96	14.05	26.03	73.97	99.65
Metals Service Centers and Offices (SIC 5051)	0.55	5.13	0.26	0.25	8.44	14.63	85.37	97.79
Refuse Systems (SIC 4953)	0.28	3.04	0.50	0.28	9.77	13.87	86.13	97.34
Roofing, Siding, and Sheet Metal Work (SIC 1761)	0.26	6.46	3.50	1.78	13.35	25.35	74.65	99.54
Fabricated Structural Metal (SIC 3441)	0.00	4.66	0.00	0.09	7.25	12.00	88.00	99.29

## M/W/DBE Availability in Denver's Market Place

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
Structural Steel Erection (SIC 1791)	0.32	5.68	3.27	3.27	17.07	29.61	70.39	96.00
Plastering, Dry Wall, and Insulation (SIC 1742)	0.16	6.85	3.64	1.82	12.56	25.03	74.97	99.39
Water Well Drilling (SIC 1781)	0.18	5.69	3.48	2.25	14.56	26.17	73.83	100.00
Ready-Mixed Concrete (SIC 3273)	0.00	2.76	0.00	0.10	7.66	10.53	89.47	99.19
Brick, Stone, and Related Construction Materials (SIC 5032)	0.00	5.25	0.15	0.19	7.99	13.58	86.42	98.71
Lawn and Garden Services (SIC 0782)	0.27	3.71	0.08	0.24	9.74	14.05	85.95	99.31
Local Trucking Without Storage (SIC 4212)	0.69	4.66	0.17	0.20	9.40	15.12	84.88	99.88
Construction Sand and Gravel (SIC 1442)	0.00	6.12	0.82	0.63	17.21	24.77	75.23	94.29
Concrete Products, n.e.c. (SIC 3272)	0.00	5.41	0.00	0.28	10.77	16.47	83.53	98.86
Masonry and Other Stonework (SIC 1741)	0.39	7.54	3.46	1.98	12.54	25.92	74.08	99.82
Architectural Services (SIC 8712)	0.30	2.13	0.79	0.25	11.97	15.44	84.56	98.56
Industrial Buildings and Warehouses (SIC 1541)	1.29	6.02	0.00	0.93	10.84	19.08	80.92	98.89
Wrecking and Demolition Work (SIC 1795)	3.06	9.87	3.03	1.50	19.27	36.73	63.27	97.50
Floor Laying and Floor Work, n.e.c. (SIC 1752)	0.20	6.00	3.76	1.87	13.16	24.98	75.02	99.72
Painting (SIC 1721)	0.34	6.73	3.41	1.92	14.88	27.28	72.72	100.00
Carpentry Work (SIC 1751)	0.14	6.23	3.52	1.86	13.04	24.80	75.20	99.66
Signs and Advertising Displays (SIC 3993)	0.22	3.20	0.06	0.70	15.78	19.96	80.04	98.25

## M/W/DBE Availability in Denver's Market Place

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	Small Business
Construction Materials, n.e.c. (SIC 5039)	0.72	3.31	0.24	0.26	8.19	12.73	87.27	100.00
Surveying Services (SIC 8713)	0.00	2.35	0.28	0.89	9.76	13.27	86.73	99.30
Glass and Glazing Work (SIC 1793)	1.49	7.47	3.70	1.61	18.20	32.47	67.53	97.92
Management Services (SIC 8741)	1.48	2.22	0.00	0.59	17.84	22.13	77.87	94.81
Terrazzo, Tile, Marble, and Mosaic Work (SIC 1743)	0.15	6.53	3.52	1.80	12.92	24.91	75.09	100.00
Plumbing and Heating Equipment and Supplies (Hydronics) (SIC 5074)	0.00	2.66	0.12	0.25	9.18	12.20	87.80	98.16
Equipment Rental and Leasing, n.e.c. (SIC 7359)	0.19	3.13	0.11	0.27	11.22	14.92	85.08	97.30
Trucking, Except Local (SIC 4213)	0.60	3.84	0.04	0.28	10.73	15.50	84.50	98.39
Lumber, Plywood, Millwork, and Wood Panels (SIC 5031)	0.00	3.55	0.03	0.21	9.61	13.41	86.59	97.41
<i>CONSTRUCTION</i>	<i>1.22</i>	<i>5.55</i>	<i>1.36</i>	<i>0.99</i>	<i>12.80</i>	<i>21.92</i>	<i>78.08</i>	<i>97.84</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.16. Professional Services—Detailed M/W/DBE Availability by Industry (Percentages)**

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business
Engineering Services (SIC 8711)	0.43	2.53	1.44	0.26	9.72	14.38	85.62	96.08
Architectural Services (SIC 8712)	0.30	2.13	0.79	0.25	11.97	15.44	84.56	98.56
Management Services (SIC 8741)	1.48	2.22	0.00	0.59	17.84	22.13	77.87	94.81
Landscape Counseling and Planning (SIC 0781)	0.21	3.59	0.49	0.45	13.44	18.18	81.82	99.44
Special Trade Contractors, n.e.c. (SIC 1799)	0.39	6.44	3.57	2.07	14.37	26.84	73.16	99.64
Electronic Parts and Equipment, n.e.c. (SIC 5065)	0.57	3.65	0.54	0.50	10.34	15.60	84.40	97.71
Electrical Work (SIC 1731)	0.54	6.61	3.43	1.90	14.56	27.04	72.96	98.71
Local Trucking Without Storage (SIC 4212)	0.69	4.66	0.17	0.20	9.40	15.12	84.88	99.88
Testing Laboratories (SIC 8734)	0.44	2.58	0.82	0.00	14.64	18.48	81.52	98.95
Nonresidential Construction, n.e.c. (SIC 1542)	1.96	5.54	0.27	0.60	12.75	21.13	78.87	97.67
Heavy Construction, n.e.c. (SIC 1629)	0.20	2.62	0.38	0.66	13.01	16.88	83.12	99.07
Excavation Work (SIC 1794)	0.23	6.27	3.51	1.96	14.05	26.03	73.97	99.65
Lawn and Garden Services (SIC 0782)	0.27	3.71	0.08	0.24	9.74	14.05	85.95	99.31
Signs and Advertising Displays (SIC 3993)	0.22	3.20	0.06	0.70	15.78	19.96	80.04	98.25
Surveying Services (SIC 8713)	0.00	2.35	0.28	0.89	9.76	13.27	86.73	99.30
<i>PROFESSIONAL SERVICES</i>	<i>0.43</i>	<i>2.62</i>	<i>1.37</i>	<i>0.31</i>	<i>10.25</i>	<i>14.97</i>	<i>85.03</i>	<i>96.67</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Availability in Denver's Market Place

**Table 4.17. Detailed M/W/DBE Availability for the City and County of Denver—Concessions-Related Goods and Services (Percentages)**

Detailed Industry	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business	Industry Weight
Communications Services, NEC (SIC 4899)	0.59	6.80	7.40	1.48	19.82	36.09	63.91	98.71	1.94
Miscellaneous General Merchandise Stores (SIC 5399)	1.21	7.06	7.49	1.29	22.69	39.74	60.26	98.66	3.85
Candy, Nut, and Confectionery Stores (SIC 5441)	1.26	6.88	7.50	1.25	24.37	41.26	58.74	99.28	1.42
Gasoline Service Stations (SIC 5541)	0.41	6.60	8.00	1.49	19.66	36.16	63.84	96.90	1.66
Men's and Boys' Clothing Stores (SIC 5611)	0.59	7.45	8.48	1.35	20.57	38.44	61.56	100.00	0.35
Women's Clothing Stores (SIC 5621)	2.00	8.31	7.48	1.09	26.86	45.75	54.25	99.65	0.10
Women's Accessory and Specialty Stores (SIC 5632)	2.44	7.73	7.52	1.02	29.28	47.98	52.02	100.00	1.34
Miscellaneous Apparel and Accessory Stores (SIC 5699)	1.88	7.85	8.28	1.12	25.77	44.91	55.09	99.44	1.50
Radio, TV, & Consumer Elec. Stores (SIC 5731)	0.22	6.18	8.61	1.32	18.98	35.32	64.68	98.75	1.46
Eating Places (SIC 5812)	0.75	7.39	8.80	1.34	20.83	39.11	60.89	98.50	37.24
Drinking Places (SIC 5813)	0.00	2.96	0.24	0.45	12.98	16.63	83.37	97.22	14.05
Book Stores (SIC 5942)	1.53	7.84	7.44	1.22	24.12	42.15	57.85	98.74	3.29
Jewelry Stores (SIC 5944)	1.36	7.54	7.84	1.21	24.25	42.20	57.80	99.33	1.07
Hobby, Toy, and Game Shops (SIC 5945)	2.06	7.45	7.59	1.09	27.68	45.87	54.13	99.63	0.79
Gift, Novelty, and Souvenir Shops (SIC 5947)	2.31	8.15	7.90	1.03	28.22	47.62	52.38	99.40	3.00
Luggage and Leather Goods Stores (SIC 5948)	0.66	6.33	8.38	1.33	20.80	37.51	62.49	95.24	1.25
News Dealers and Newsstands (SIC 5994)	0.79	6.60	7.56	1.35	21.79	38.10	61.90	100.00	12.38
Miscellaneous Retail Stores, n.e.c. (SIC 5999)	0.85	9.54	8.35	1.23	21.02	40.98	59.02	100.00	0.51
Credit Unions	0.00	6.02	7.52	1.50	18.05	33.09	66.91	0.00	1.03

## M/W/DBE Availability in Denver's Market Place

Detailed Industry	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	Small Business	Industry Weight
(SIC 6061/6062)									
Functions Related to Deposit Banking (SIC 6099)	0.39	6.51	7.96	1.42	19.83	36.10	63.90	98.54	5.93
Beauty Shops (SIC 7231)	3.28	8.93	8.10	0.81	32.45	53.57	46.43	99.95	0.10
Barber Shops (SIC 7241)	1.64	8.45	7.75	1.17	24.65	43.66	56.34	100.00	0.10
Shoe Repair Shops and Shoeshine Parlors (SIC 7251)	1.85	13.31	15.64	0.76	25.39	56.94	43.06	100.00	0.29
Personal Services (SIC 7299)	1.92	7.58	7.74	1.11	26.59	44.94	55.06	99.89	0.99
Advertising Agencies (SIC 7311)	1.85	7.55	7.55	1.17	25.00	43.12	56.88	96.40	2.65
Video Tape Rental (SIC 7841)	0.80	6.49	8.40	1.32	21.62	38.63	61.37	100.00	0.54
Museums and Art Galleries (SIC 8412)	0.14	6.16	7.57	1.49	18.83	34.19	65.81	100.00	1.22
<i>CONCESSIONS (WEIGHTED)</i>	<i>0.80</i>	<i>6.60</i>	<i>7.10</i>	<i>1.19</i>	<i>20.61</i>	<i>36.31</i>	<i>63.73</i>	<i>97.59</i>	

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## **V. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings**

### **A. Review of Relevant Literature**

We examine here disparities in business formation and earnings principally in the private sector, where contracting and procurement activities are generally *not* subject to M/W/DBE requirements. Statistical examination of disparities in the private sector economy surrounding the City and County of Denver is important for at least three reasons. First, to the extent that discriminatory practices by contractors, suppliers, insurers, lenders, customers, and others limit the ability of M/W/DBEs to compete, those practices are likely to impact the larger private sector as well as in the public sector. Second, examining the utilization of M/W/DBEs in the private sector provides an indicator of the extent to which M/W/DBEs are used in the absence of affirmative action efforts, since few firms in the private sector make such efforts. Third, the Supreme Court and other courts have acknowledged that state and local governments have a constitutional duty not to contribute to the perpetuation of racial or ethnic discrimination in the private sector of the local economy.

After years of comparative neglect, research on the economics of entrepreneurship—especially upon self-employment—is beginning to expand. Microeconomic work includes Fuchs (1982), Borjas and Bronars (1989), Evans and Jovanovic (1989), Evans and Leighton (1989), Fairlie (1999), Fairlie and Meyer (1996, 1998), Reardon (1998), Wainwright (2000) for the United States, Rees and Shah (1986), Pickles and O’Farrell (1987), Blanchflower and Oswald (1990, 1998), Blanchflower and Freeman (1994), Meager (1992), Taylor (1996), and Robson (1998a, 1998b) for the UK, DeWit and van Winden (1990) for the Netherlands, Alba-Ramirez (1994) for Spain, Bernhardt (1994), Schuetze (1998), Arai (1997), Lentz and Laband (1990), and Kuhn and Schuetze (1998) for Canada, Laferrere and McEntee (1995) for France, Blanchflower and Meyer (1994) and Kidd (1993) for Australia, and Foti and Vivarelli (1994) for Italy. There are also several theoretical papers including Kihlstrom and Laffonte (1979), Kanbur (1982), Croate and Tennyson (1992), and Holmes and Schmitz (1990), plus a few papers that draw comparisons across countries *i.e.* Schuetze (1998) for Canada and the U.S., Blanchflower and Meyer (1994) for Australia and the U.S., Alba-Ramirez (1994) for Spain and the United States, and Acs and Evans (1994) for many countries.

There is a good deal of agreement in the literature on the micro-economic correlates of self-employment. Aronson (1991) provides a good overview. In the U.S., it appears that self-employment rises with age, is higher among men than women and higher among Whites than Blacks. The least educated have the highest probability of being self-employed. However, evidence is also found in the U.S. that the most highly educated also have relatively high probabilities. Increases in educational attainment are generally found to lead to increases in the probability of being self-employed. The more children in the family, the higher likelihood of (male) self-employment. Workers in agriculture and construction are also especially likely to be self-employed.

There has been relatively less work on how institutional factors influence self-employment. Such work that has been conducted includes examining the role of minimum wage legislation (Blau,

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

1987), immigration (Fairlie and Meyer, 1998; 2003)<sup>137</sup>, immigration policy (Borjas and Bronars, 1989), and retirement policies (Quinn, 1980). Studies by Long (1982), and Blau (1987), and more recently by Schuetze (1998), have considered the role of taxes.<sup>138</sup> A number of other studies have also considered the cyclical aspects of self-employment and in particular how movements of self-employment are correlated with movements in unemployment. Meager (1992), provides a useful summary of much of this work. Evans and Leighton (1989) found that white men who are unemployed are nearly twice as likely as wage workers to enter self-employment. Bogenhold and Staber (1991) also find evidence that unemployment and self-employment are positively correlated. Blanchflower and Oswald (1990) found a strong negative relationship between regional unemployment and self-employment for the period 1983-1989 in the U.K., using a pooled cross-section time-series data set. In Blanchflower and Oswald (1998) we confirmed this result, finding that the log of the county unemployment rate entered negatively in a cross-section self-employment Probits for young people age 23 in 1981, and for the same people aged 33 in 1991. Taylor (1996) confirmed this result using data from the British Household Panel Study of 1991, showing that the probability of being self-employed rises when expected self-employment earnings increase relative to employee earnings, *i.e.*, when unemployment is low. Acs and Evans (1994) found evidence from an analysis of a panel of countries that the unemployment rate entered negatively in a fixed effect and random effects formulation. However, Schuetze (1998) found that for the U.S. and Canada the elasticity of the male self-employment rate with respect to the unemployment rate was considerably smaller than found for the effect from taxes discussed above. The elasticity of self-employment associated with the unemployment rate is about 0.1 in both countries using 1994 figures. A decrease of 5 percentage points in the unemployment rate in the U.S. (about the same decline occurred from 1983-1989) leads to about a 1 percentage point decrease in self-employment. Blanchflower (2000) found that there is generally a negative relationship between the self-employment rate and the unemployment rate. It does seem then that there is some disagreement in the literature on whether high unemployment acts to discourage self-employment because of the lack of available opportunities or encourage it because of the lack of viable alternatives.

In a recent paper, Blanchflower, Oswald and Stutzer found that there is a strikingly large latent desire to own a business. There exists frustrated entrepreneurship on a huge scale in the U.S. and other Organization for Economic Co-Operation and Development (OECD) countries. In the U.S., 7 out of 10 people say they would prefer to be self-employed. This compares to an actual proportion of self-employed people in 2001 of 7.3 percent of the civilian labor force, which also shows that the proportion of the labor force that is self-employed has declined steadily since 1990 following a small increase in the rate from 1980 to 1990. This raises an important puzzle.

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<sup>137</sup> Fairlie and Meyer (1998) found that immigration had no statistically significant impact at all on black self-employment. In a subsequent paper Fairlie and Meyer (2003), found that self-employed immigrants did displace self-employed native non-Blacks. They found that immigration has a large negative effect on the probability of self-employment among native non-Blacks, although, surprisingly, they found that immigrants increase native self-employment earnings.

<sup>138</sup> In an interesting study pooling individual level data for the U.S. and Canada from the CPS and the Survey of Consumer Finances, respectively, Schuetze (1998), finds that increases in income taxes have large and positive effects on the male self-employment rate. He found that a 30 percent increase in taxes generated a rise of 0.9 to 2.0 percentage points in the male self-employment rate in Canada compared with a rise of 0.8 to 1.4 percentage points in the U.S. over 1994 levels.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Why do so few individuals in the U.S. and OECD manage to translate their preferences into action? Lack of start-up capital is one likely explanation. This factor is commonly cited by small-business managers themselves (Blanchflower and Oswald, 1998). There is also econometric evidence that confirms this barrier. Holding other influences constant, people who inherit cash, who win the lottery, or who have large family assets, are all more likely both to set up and sustain a lasting small business. By contrast, childhood personality test-scores turn out to have almost no predictive power about which persons will be running their own businesses as adults.

One primary impediment to entrepreneurship among minorities is lack of capital. In work based on U.S. micro data at the level of the individual, Evans and Leighton (1989), and Evans and Jovanovic (1989), have argued formally that entrepreneurs face liquidity constraints. The authors use the National Longitudinal Survey of Young Men for 1966-1981, and the Current Population Surveys for 1968-1987. The key test shows that, all else remaining equal, people with greater family assets are more likely to switch to self-employment from employment. This asset variable enters Probit equations significantly and with a quadratic form. Although Evans and his collaborators draw the conclusion that capital and liquidity constraints bind, this claim is open to the objection that other interpretations of their correlation are feasible. One possibility, for example, is that inherently acquisitive individuals both start their own businesses and forego leisure to build up family assets. In this case, there would be a correlation between family assets and movement into self-employment even if capital constraints did not exist. A second possibility is that the correlation between family assets and the movement to self-employment arises because children tend to inherit family firms. Blanchflower and Oswald (1998), however, find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift.<sup>139</sup> Moreover, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Work by Holtz-Eakin, Joulfaian and Rosen (1994a, 1994b), drew similar conclusions using different methods on U.S. data, examining flows into and out of self-employment and finding that inheritances both raise entry and slow exit.

The work of Black *et al.* (1996) for the UK, discovers an apparently powerful role for house prices (through its impact on equity withdrawal) in affecting the supply of small new firms. Cowling and Mitchell (1997), find a similar result. Again this is suggestive of capital constraints. Finally, Lindh and Ohlsson (1994) adopt the Blanchflower-Oswald procedure and provide complementary evidence for Sweden. Bernhardt (1994), in a study for Canada, using data from the 1981 Social Change in Canada Project also found evidence that capital constraints appear to bind. Using the 1991 French Household Survey of Financial Assets, Laferrere and McEntee (1995), examined the determinants of self-employment using data on intergenerational transfers of wealth, education, informal human capital and a range of demographic variables. They also find evidence of the importance played by the family in the decision to enter self-employment. Intergenerational transfers of wealth, familial transfers of human capital and the structure of the family were found to be determining factors in the decision to move from wage work into entrepreneurship. Broussard *et al.* (2003) found that the self-employed have between 0.2 and 0.4 more children compared to the non-self-employed. The authors argue that having more children

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<sup>139</sup> This emerges from British data, the National Child Development Study; a birth cohort of children born in March 1958 who have been followed for the whole of their lives.

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can increase the likelihood that an inside family member will be a good match at running the business. One might also think that the existence of family businesses, which are particularly prevalent in farming, is a further way to overcome the existence of capital constraints. Transfers of firms within families will help to preserve the status quo and will work against the interests of Blacks in particular who do not have as strong a history of business ownership as indigenous whites. Analogously, Hout and Rosen (2000) found that the offspring of self-employed fathers are more likely than others to become self-employed and argued that the historically low rates of self-employment among Blacks and Latinos may contribute to their low contemporary rates.

A continuing puzzle in the literature has been why, nationally, the self-employment rate of Black males is one third of that of white males and has remained roughly constant since 1910. Fairlie and Meyer (2000) rule out a number of explanations for the difference. They found that trends in demographic factors, including the Great Migration and the racial convergence in education levels “did not have large effects on the trend in the racial gap in self-employment” (p. 662). They also found that an initial lack of business experience “cannot explain the current low levels of black self-employment.” Further, they found that “the lack of traditions in business enterprise among blacks that resulted from slavery cannot explain a substantial part of the current racial gap in self-employment” (p. 664).

Fairlie (1999) and Wainwright (2000) have shown that a considerable part of the explanation of the differences between the Black and White self-employment rates can be attributed to discrimination. Using PUMS data from the 1990 Census, Wainwright (2000) demonstrated that these disparities tend to persist even when factors such as geography, industry, occupation, age, education and assets are held constant.

Bates (1989) finds strong supporting evidence that racial differences in levels of financial capital have significant effects upon racial patterns in business failure rates. Fairlie (1999) also found that the black exit rate from self-employment is twice as high as that of whites. An example will help to make the point. Two baths are being filled with water. In the first scenario, both have the plug in. Water flows into bath A at the same rate as it does into bath B -- that is, the inflow rate is the same. When we return after 10 minutes the amount of water (the stock) will be the same in the two baths as the inflow rates were the same. In the second scenario, taking out the plugs allows for the possibility of different outflow rates from the two baths. Bath A (the black firms) has a much larger drain and hence the water flows out more quickly than it does from bath B (the white firms). When we return after ten minutes, even though the inflow rates are the same there is much less water in bath A than there is in bath B. Lower exit rates for white-owned firms than are found for minority-owned firms is perfectly consistent with the observed fact that minority-owned firms are younger and smaller than white-owned firms. The extent to which that will be true is a function of the relative sizes of the inflow and the outflow rates.

### **B. Race and Sex Disparities in Earnings**

In this section, we examine earnings to determine whether minority and female entrepreneurs earn less from their businesses than do their White male counterparts. Other things equal, if minority and female business owners as a group cannot achieve comparable earnings from their businesses as similarly-situated non-minorities because of discrimination, then failure rates for

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M/W/DBEs will be higher and M/W/DBE formation rates will be lower than would be observed in a race- and sex-neutral marketplace. Both phenomena would contribute directly to lower levels of minority and female business ownership.

Below, we first examine earnings disparities among wage and salary employees, that is, non-business owners. It is critical to examine this segment of the labor force since a key source of new entrepreneurs in any given industry is the pool of experienced wage and salary workers in that same industry (Blanchflower, 2000; 2004) Any employment discrimination that adversely impacts the ability of minorities or women to succeed in the labor force directly shrinks the available pool of potential M/W/DBEs. In almost every instance examined, a statistically significant adverse impact on earnings is observed in both the economy at large and in the construction and construction-related professional services sector.<sup>140</sup>

We then turn to an examination of differences in earnings among the self-employed, that is, among business owners. Here too, among the pool of minorities and women who have formed businesses despite discrimination in both employment opportunities and business opportunities, statistically significant adverse impacts are observed in the vast majority of cases in construction and construction-related professional services (hereafter, “construction”), and other sectors of the economy.

In the remainder of this Chapter, we discuss the methods and data employed and present the specific findings.

### 1. Methods

We used a statistical technique known as linear regression analysis to estimate the effect of each of a set of observable characteristics, such as education and age, on an outcome variable of interest. In this case, the outcome variable of interest is earnings and we used regression to compare earnings among individuals in similar geographic and product markets at similar points in time and with similar years of education and potential labor market experience and see if any adverse race or sex differences remain. In a discrimination free market place, one would not expect to observe significant differences in earnings by race or sex among such similarly situated observations.

Regression also allows us to narrowly tailor our statistical tests to the City and County of Denver and assess whether disparities in the City and County of Denver are statistically significantly different from those observed elsewhere in the nation. Starting from an economy-wide data set, we first estimated the basic model of earnings differences just described and also included an indicator variable for the City and County of Denver. This model appears as Specification (1) in Tables 5.1 through 5.12. Next, we estimated Specification (2), which is the same model as (1)

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<sup>140</sup> There is a growing body of evidence that discriminatory constraints in the capital market prevent minority-owned businesses from obtaining business loans. Furthermore, even when they are able to obtain them there is evidence that these loans are not obtained on equal terms: minority-owned firms have to pay higher interest rates, other things being equal. This is another form of discrimination with an obvious and direct impact on the ability of racial minorities to form businesses and to expand or grow previously formed businesses. *See* Chapter VI.

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but with the addition of indicator variables that interact race, sex, and the City and County of Denver. Specification (3) represents our ultimate specification, which includes all the variables from the basic model as well as any of the interaction terms from Specification (2) that were statistically significant.<sup>141</sup>

Any negative and statistically significant differences by race or sex that remain in Specification (3) after holding all of these other factors constant—time, age, education, geography, and industry—are consistent with what would be observed in a market suffering from business-related discrimination.

### 2. Data

The analyses undertaken in Study report require individual-level data (*i.e.*, “microdata”) with relevant information on business ownership status and other key socioeconomic characteristics. Two primary data sources are available.

The first is the Five Percent Public Use Microdata Samples (PUMS) from the 2000 decennial census. The 2000 PUMS contains observations representing five percent of all U.S. housing units and the persons in them (approximately 14 million records). Released in late 2003, the PUMS provides the full range of population and housing information collected in the 2000 census. Business ownership status is identified in the PUMS through the “class of worker” variable, which distinguishes the unincorporated and incorporated self-employed from others in the labor force. The presence of the class of worker variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings.

The second source of data is the Current Population Survey (CPS). The CPS has been conducted monthly by the Census Bureau and the Bureau of Labor Statistics for over 40 years, and is a primary source of official government statistics on employment and unemployment. Currently, about 56,500 households are scientifically selected for the CPS on the basis of area of residence in order to represent the nation as a whole, individual states and the largest metropolitan areas. In addition to information on employment status, the CPS collects information on age, sex, race, marital status, educational attainment, earnings, occupation, industry, and other characteristics. These statistics serve to update the information collected every 10 years through the decennial census.<sup>142</sup>

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<sup>141</sup> If none of these terms is significant then Specification (3) reduces to Specification (1).

<sup>142</sup> Since 1979, about a quarter of the households in each monthly CPS survey have been asked to provide additional information, including usual weekly earnings and weekly hours of work. These households are said to be in “Outgoing Rotation Groups” (ORG) because of the way the CPS rotates households for interviews. Each household selected for the survey is interviewed once a month for four consecutive months, not interviewed for eight months, and interviewed again once a month for four more months. The households in the ORG are those that are in either the fourth or the eighth survey. The ORG files of the CPS include individual data for about 30,000 individuals each month, or over 350,000 per year. Data in which the City and County of Denver is identifiable are available in a comparable form from 1986 through 2002. Data from the ORG files are used below in addition to the PUMS to examine earnings disparities among wage and salary workers. The ORG files however, do not contain data on the earnings of the self-employed. Annual earnings, whether from wages or self-employment are available from the March CPS, however, also known as the Annual Demographic File. This latter

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## 3. Findings: Race and Sex Disparities in Wage and Salary Earnings

Tables 5.1 through 5.6 report results from our regression analyses of annual earnings among wage and salary workers. Tables 5.1 through 5.3 focus on the economy as a whole and Tables 5.4 through 5.6 on construction. Tables 5.1 and 5.4 are derived from the 2000 PUMS, Tables 5.2 and 5.5 are derived from the 1979–1991 CPS, and Tables 5.3 and 5.6 are derived from the 1992–2002 CPS. The numbers shown in each of these six tables indicate the percentage difference between the average wages of a given race/sex group and comparable White males.

### a. Specification (1) - the Basic Model

For example, in Table 5.1 Specification (1) the estimated percentage difference in annual wages between Blacks (both sexes) and White males in 2000 was -29.7 percent. That is, average annual wages among Blacks were 29.7 percent lower than for White males who were otherwise similar in terms of geographic location, industry, age, and education. The number in parentheses below each percentage difference is the t-statistic, which indicates whether the estimated percentage difference is statistically significant or not. In Tables 5.1 through 5.6, a t-statistic of 1.99 or larger indicates statistical significance at a 95 percent confidence level or better.<sup>143</sup> In the example just used, the t-statistic of 182.62 indicates that the result is statistically significant.

Specification (1) in Tables 5.1-5.3 shows negative and statistically significant wage disparities for Blacks, Hispanics, Asians, Native Americans, persons reporting in multiple race categories, and White women consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from a low of -16.7 percent for Hispanics in Table 5.2 to a high of -35.8 percent for White women in Table 5.1.

Specification (1) in Tables 5.4 through 5.6 shows similar results when the basic analysis is restricted to construction. In this sector, large, negative, and statistically significant wage disparities are observed for all minority groups and for white women. For Blacks, the large wage disparities observed in the construction sector are similar to those observed economy-wide. Large wage disparities in construction are also observed for Hispanics, Asians, and Native Americans; however, the differences are somewhat smaller than those observed in the economy as a whole. For White women, large disparities are observed both economy-wide and in construction—however, disparities in construction are larger.

A comparison of Tables 5.2 and 5.3 shows changes in observed wage disparities over time for the economy as a whole. Tables 5.5 and 5.6 do the same for construction. For the economy as a whole, as well as for the construction sector, disparities for Blacks became slightly smaller between 1979–1991 and 1992–2002, but remain large (average wages more than 20 percent

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file also contains the basic monthly demographic and labor force data. In the March CPS, data on employment, earnings, and income refer to the preceding year, although demographic data refer to the time of the survey. The March surveys are therefore included for the years 1987-2003. Because the information relates to the preceding year, the earnings data relate to the years 1986-2002. The sample consists of any individual who reports positive self-employment earnings in the year preceding the interview.

<sup>143</sup> From a two-tailed test.

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below comparable White males). For Hispanics, wage disparities increased during the same period and average wages remain 18 percent lower in construction than for comparable White males and 21 percent lower elsewhere in the economy. For White women, wage disparities grew smaller between the two periods, both in construction and in the economy as a whole, although they remain large (average wages 18-25 percent below comparable White males).<sup>144</sup>

### **b. Specifications (2) and (3) - the Full Model Including Denver-Specific Interaction Terms**

Next, we turn to Specifications (2) and (3) in Tables 5.1 through 5.6. In each of these Tables, Specification (2) is the basic regression model enhanced by the addition of a set of interaction terms that test whether minorities and women in the City and County of Denver differ significantly from those elsewhere in the U.S. economy. Specification (2) in Table 5.2, for example, shows a negative and statistically significant 22.0 percent wage differential that estimates the direct effect of being Black in 2000, as well as a negative and statistically significant 3.4 percent differential in that year that captures the indirect effect of residing in the City and County of Denver and being Black. Therefore, the net wage disparity for Blacks in the City and County of Denver is approximately -25.4 percent (-22.0 percent minus 3.4 percent).

Specification (3) simply repeats Specification (2), dropping any Denver interaction terms that are not statistically significant. In Table 5.3, for example, the only interaction terms included in the final specification were for Hispanics and White women. The net result of Specification (3) in Tables 5.1, 5.2 and 5.3 is evidence of large, negative and statistically significant wage disparities for all minority groups and for White women. Similar results hold in construction as well (Tables 5.4, 5.5, and 5.6).<sup>145</sup>

Clearly, prime age minorities and women earn substantially and significantly less from their labors than their White male counterparts. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduce the future availability of M/W/DBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to entrepreneurial opportunities. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower M/W/DBE availability levels than would be observed in a race- and sex-neutral marketplace.

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<sup>144</sup> It is not possible to perform a similar comparison for Asians or Native Americans, as they were not identified separately in the CPS prior to 1992 and instead were classified together as “Other Race.”

<sup>145</sup> The only exception being for Blacks and Hispanics in the Construction and A&E sector during the 1979-1991 period (Table 5.5, column 3).

# Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

## 4. Findings: Race and Sex Disparities in Business Owner Earnings

We turn next to the analysis of race and sex disparities in business owner earnings. Tables 5.7 through 5.12 report results from regression analyses of earnings from self-employment. Tables 5.7 through 5.9 focus on the economy as a whole and Tables 5.10 through 5.12 on construction. Tables 5.7 and 5.10 are derived from the 2000 PUMS, Tables 5.8 and 5.11 are derived from the 1979–1991 CPS, and Tables 5.9 and 5.12 are derived from the 1992–2002 CPS. The numbers shown in each of these six tables indicate the percentage difference between the average annual self-employment earnings of a given race/sex group and comparable White males.

### a. Specification (1) - the Basic Model

Specification (1) in Tables 5.7 through 5.9 shows negative and statistically significant and large business owner earnings disparities for Blacks, Hispanics, Asians, Native Americans, and White women consistent with the presence of discrimination in these markets. The measured difference for Blacks ranges between 28 percent and 59 percent; for Hispanics, from 19 percent to 39 percent; for Asians, from 4 percent to 22 percent; and for Native Americans, from 38 percent to 51 percent. Large business owner earnings disparities are observed for White women as well: between 44 percent and 73 percent lower than for comparable White men.

Turning to the construction sector, Column (1) of Table 5.10 from the PUMS shows negative, large, and statistically significant business owner earnings disparities for Blacks (minus 29 percent), Hispanics (minus 15 percent), Native Americans (minus 37 percent), and White females (minus 51 percent) in 2000. In Table 5.11 the CPS construction data for the 1979-1991 period shows negative, large, and statistically significant business owner earnings disparities for Blacks, Hispanics, and White females. The “Other Race” term, consisting primarily of Asians and Native Americans was also large, negative, and significant. In Table 5.12, the CPS construction data for 1992-2002 shows large, negative, and statistically significant disparities for Blacks and White females. Coefficients for Hispanics, Asians, and Native Americans in Table 5.12 are also large and negative but are not significant.

Changes in observed business owner earnings disparities over time can be seen by comparing Tables 5.8 and 5.9 for the economy as a whole or Tables 5.11 and 5.12 for construction. For Blacks and Hispanics, in the economy as a whole, the large earnings disparities observed in the 1979–1991 period grew even larger during 1992-2002. For Blacks, the differential grew from -50 percent to -59 percent. For Hispanics, it grew from -28 percent to -39 percent. In the construction sector the movement was in the opposite direction. Earnings differentials for Blacks fell from -43 percent in 1979-1991 to -33 percent in 1992-2002. For Hispanics, the figures are -25 percent and -14 percent, respectively.

For White women, earnings disparities in the economy as a whole are very large but appear to have lessened slightly over time, declining from an earnings differential of -73 percent in the 1979-1991 period to -62 percent in the 1992-2002 period. In the construction sector, however, the -84 percent earnings differential for White females is very large and has not lessened at all over time.

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### **b. Specifications (2) and (3) - the Full Model Including Denver-Specific Interaction Terms**

Next, we turn to Specifications (2) and (3) in Tables 5.7 through 5.12. Specification (2) is the basic regression model enhanced by a set of interaction terms to test whether minorities and women in the City and County of Denver differ significantly from persons elsewhere in the U.S. economy. Specification (3) drops any Denver interaction terms that are not statistically significant.

For the economy as a whole in 2000 (Table 5.7), the Denver interaction terms for minority firms are not statistically significant, indicating that estimates for Denver minorities are in agreement with results for the nation as a whole. The Denver interaction term for White female firms is positive and significant, however, indicating that business owner earnings differentials for White females in Denver are somewhat smaller than for the nation as a whole. With one exception, in Tables 5.8 for the 1979-1991 period, and Table 5.9, for the 1992-2002 period, none of the minority or White female interaction terms for Denver is significant, indicating that estimates for Denver M/W/DBEs are in agreement with results for the nation as a whole during these two time periods.<sup>146</sup>

For the construction sector (Tables 5.10, 5.11, and 5.12), with two exceptions, none of the Denver interaction terms was statistically significant.<sup>147</sup>

As was the case for wage and salary earners, prime age minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated White male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that directly and adversely affects M/W/DBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of White males, growth rates will slow, business failure rates will increase, and as demonstrated in the next section, business formation rates will decrease. Combined, these phenomena result in lower M/W/DBE availability levels than would be observed in a race- and sex-neutral marketplace.

### **C. Race and Sex Disparities in Business Formation**

Finally, we turn to the analysis of race and sex disparities in business formation.<sup>148</sup> In this section, we compare self-employment rates by race and sex to determine whether minorities or women are as likely to enter the ranks of entrepreneurs as similarly-situated White males. We find that they are not as likely to do so and that minority business formation rates would likely be substantially and significantly higher if markets operated in a race- and sex-neutral manner.

Discrimination in the labor market, symptoms of which are evidenced in Section B.3 above, might cause wage and salary workers to turn to self-employment in hopes of encountering less discrimination from customers and suppliers than from employers and co-workers. Other things

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<sup>146</sup> The exception being “Other Races” in the 1979-1991 regression.

<sup>147</sup> The exceptions as Hispanics in the 2000 PUMS sample and Other Races in the 1979-1991 CPS sample.

<sup>148</sup> We use the phrases “business formation rates” and “self-employment rates” interchangeably in this Study.

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equal, and assuming minority and female workers did not believe that discrimination pervaded commercial markets as well, this would lead minority and female business formation rates to be higher than would otherwise be expected.

On the other hand, discrimination in the labor market prevents minorities and women from acquiring the very skills, experience, and positions that are often observed among those who leave the ranks of the wage and salary earners to start their own businesses. Many construction contracting concerns have been formed by men who were once employed as foreman for other contractors, fewer by those who were employed instead as laborers. Similarly, discrimination in commercial capital and credit markets, as well as asset and wealth distribution, prevents minorities and women from acquiring the financial credit and capital that are so often prerequisite to starting or expanding a business. Other things equal, these phenomena would lead minority and female business formation rates to be lower than otherwise would be expected.

Further, discrimination by commercial customers and suppliers against M/W/DBEs, symptoms of which are evidenced in Section B.4 above and elsewhere, operates to increase input prices and lower output prices for M/W/DBEs. This discrimination leads to higher rates of failure for some minority and women firms, lower rates of profitability and growth for others, and prevents some minorities and women from ever starting businesses.<sup>149</sup> All of these phenomena, other things equal, would contribute directly to lower observed rates of minority and female self-employment.

### 1. Methods and Data

To see if minorities or White women are as likely to be business owners as are comparable White males, we use a statistical technique known as Probit regression. Probit regression is used to determine the relationship between a categorical variable—one that can be characterized in terms of a yes or no response as opposed to a continuous number—and a set of characteristics that are related to the outcome of the categorical variable. Probit regression produces estimates of the extent to which each characteristic is positively or negatively related to the likelihood that the categorical variable will be a yes or no. For example, Probit regression is used by statisticians to estimate the likelihood that an individual participates in the labor force, retires this year, or contracts a particular disease—these are all variables that can be categorized by a response of yes (for example, she is in the labor force) or no (for example, she is not in the labor force)—and the extent to which certain factors are positively or negatively related to the likelihood (for example, the more education she has, the more likely that she is in the labor force). Probit regression is one of several techniques that can be used to examine qualitative outcomes. Generally, other techniques such as Logit regression yield similar results.<sup>150</sup> In the present case, Probit regression is used to examine the relationship between the choice to own a business (yes or no) the other demographic and socioeconomic characteristics in our basic model. The underlying data for this section is once again the 2000 PUMS, the 1979-1991 CPS, and the 1992-2002 CPS.

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<sup>149</sup> See also the materials cited at fn. 140 *supra*.

<sup>150</sup> For a detailed discussion, see Maddala (1983). Probit analysis is performed here using the “dprobit” command in the statistical program STATA.

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## 2. Findings: Race and Sex Disparities in Business Formation

As a point of reference for what follows, Tables 5.13 and 5.14 provide a summary of business ownership rates in 2000 by race and sex. A striking feature of both tables is how much higher business ownership rates in the United States are in general for White males than for other groups. Table 5.13, for example, shows a 9.4 percentage point difference between the overall self-employment rate of Hispanics and White Males in the City and County of Denver ( $13.8 - 4.4 = 9.4$ ), and Table 5.14 shows an even larger 16.3 percentage point difference in the construction sector self-employment rate for this group. This 16.3 percentage point gap translates into an Hispanic business formation rate in Denver construction that is almost 70 percent lower than the White male business formation rate (*i.e.*,  $(7.3 - 23.6)/23.6 = -0.69$ ).

For Asians nationally, the overall business formation rate is 3.3 points lower than the White male rate. In Denver, the gap is smaller at 2.9 points—leaving the Asian business formation rate in Denver about 21 percent lower than the rate for comparable White males. In Denver construction, the Asian rate is 48 percent lower.

For Native Americans nationally, the overall business formation rate is 5.4 points lower than the White male rate. In Denver, the gap is larger at 9.1 points—leaving the Native American business formation rate about 66 percent lower than the rate for comparable White males. In Denver construction, the Native American rate is almost 90 percent lower.

For White women nationally, the overall business formation rate is 5.2 points lower than the White male rate. In Denver, the gap is smaller at 3.3 points. This leaves the White female business formation rate in Denver almost 25 percent lower than the rate for comparable White males. In Denver construction, the White female rate is almost 50 percent lower.

For Blacks nationally, the overall business formation rate is 8.3 points lower than the White male rate. In Denver, the gap is smaller at 7.7 points. This leaves the Black business formation rate in Denver almost 60 percent lower for Blacks than for comparable White males. In the Denver construction sector, an adverse business formation disparity for Blacks is not observed in the 2000 PUMS data but *is* observed in the 1992-2002 CPS data. It is possible this inconsistency is due to a sample size or survey design anomaly. In any case, the business owner earnings analyses still point strongly to adverse disparities facing Blacks in Denver area construction markets.<sup>151</sup>

There is no doubt that part of the group differences shown in Tables 5.13 and 5.14 are associated with differences in the distribution of individual characteristics and preferences between minorities, women, and White males. It is well known that personal earnings tend to increase with age, for example. It is also true that the propensity toward self-employment increases with age.<sup>152</sup> Since most minority populations in the U.S. have a lower median age than the non-Hispanic white population, we must examine whether the disparities in business ownership evidenced in Tables 5.13 and 5.14 are largely—or even entirely—due to differences in the age

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<sup>151</sup> See Tables 5.10, 5.11, and 5.12. Moreover, the Census' SBO and the NERA's credit market analyses corroborate adverse disparities for Blacks in Denver area construction markets as well.

<sup>152</sup> Wainwright (2000), p. 86.

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distribution of minorities compared to non-minorities or other factors such as education, geographic location, or industry preferences.

The remainder of this section presents a series of regression analyses designed to address whether large, negative and statistically significant race and sex disparities are found among otherwise similarly-situated individuals. Tables 5.15 through 5.20 report results from regression analyses of the decision to start a business. Tables 5.15 through 5.17 focus on the economy as a whole and Tables 5.18 through 5.20 focus on construction. As in previous sections, the first in each triad of Tables is derived from the 2000 PUMS, the second from the 1979–1991 CPS, and the third from the 1992–2002 CPS. The numbers shown in each of these tables indicate the percentage point difference between the probability of self-employment for a given race/sex group and for comparable White males.

### a. Specification (1) - the Basic Model

Specification (1) in Tables 5.15 through 5.17 shows negative, statistically significant and large business formation disparities for Blacks, Hispanics, Asians, Native Americans, and White women consistent with the presence of discrimination in these markets. Specification (1) in Tables 5.18 through 5.20 shows similar large, negative, and statistically significant business formation disparities for every group in the construction sector.

Once again, Tables 5.16 and 5.17 for the economy as a whole, and Tables 5.19 and 5.20 for the construction sector describe changes in observed business owner earnings disparities over time. For the economy as a whole as well as for the construction sector, disparities for Blacks and Hispanics have actually worsened in recent years, while those for Asians and Native Americans have not changed much. In the construction sector, disparities for White women have lessened substantially in the construction sector, although they remain large. Disparities for White women in the economy as a whole, in contrast, barely changed between the two periods.

### b. Specifications (2) and (3) - the Full Model Including Denver-Specific Interaction Terms

Several of the Denver interaction terms included in Specification (2) were significant. The final results are in Specification (3) for Tables 5.15-5.19, and in Specification (1) for Table 5.20. To summarize for the economy-wide results (Tables 5.15-5.17):

- The remaining difference for Blacks ranges between -3.7 and -4.8 percentage points (between 27-35 percent lower than the corresponding White male business formation rate).<sup>153</sup>
- For Hispanics, the remaining difference ranges from -2.3 to -5.2 percentage points (between 17-38 percent lower than the White male business formation rate).

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<sup>153</sup> Because the overall White male self-employment rate for Denver is 12.2 percent (Table 49), the rate for comparable Blacks is approximately 30–35 percent lower than expected (i.e.  $2.1 \div 12.2 \approx 0.17$ ;  $4.8 \div 12.2 \approx 0.39$ ).

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- For Asians, the remaining difference ranges from +0.4 to -1.5 percentage points (from 3 percent higher to 11 percent lower than the White male business formation rate).
- For Native Americans, the remaining difference ranges from -3.0 to -3.4 percentage points (between 22-25 percent lower than the White male business formation rate).
- For White women, the remaining difference ranges from -1.0 to -1.3 percentage points (between 7-9 percent lower than the White male business formation rate).

To summarize for the construction sector results (Tables 5.18-5.20):

- For Blacks, the remaining difference ranges between +8.2 and -11.0 percentage points (from 35 percent higher to 47 percent lower than the corresponding White male business formation rate).
- For Hispanics, the remaining difference ranges between -6.4 and -12.5 percentage points (between 27-53 percent lower than the White male business formation rate).
- For Asians, the remaining difference ranges between -5.7 and -7.5 percentage points (between 24-32 percent lower than the White male business formation rate).
- For Native Americans, the remaining difference ranges between -8.0 and -8.9 percentage points (between 34-38 percent lower than the White male business formation rate).
- For White women, the remaining difference ranges between -4.8 and -9.9 percentage points (between 20-42 percent lower than the White male business formation rate).

### **c. Conclusions**

This section has demonstrated that observed M/W/DBE availability levels in the City and County of Denver are substantially and statistically significantly lower than those that would be expected to be observed if commercial markets operated in a race- and sex-neutral manner. This suggests that minorities and women are substantially and significantly less likely to own their own businesses as the result of discrimination than would be expected based upon their observable characteristics including age, education, geographic location, and industry. These groups also suffer substantial and significant earnings disadvantages relative to comparable White males whether they work as employees or as entrepreneurs.

### **D. Potential M/W/DBE Availability**

The Probit regression results for the Denver construction sector from Table 5.18 are combined with weighted average self-employment rates by race and sex from the 2000 PUMS (Table 5.14) to determine the expected difference between baseline availability and expected availability in a race-neutral marketplace. These figures appear in column (2) of Table 5.21.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Overall, the self-employment rate for minorities and women in the construction sector is 10.0 percent. According to the regression specification underlying Table 5.18, column 3, that rate would be 18.6 percent, or 86 percent higher, in a race and sex neutral marketplace. Put differently, the disparity ratio of the actual business formation rate to the potential business formation rate is 0.54. Disparity ratios are large, adverse, and statistically significant for almost all groups examined. The largest disparity observed is for Native Americans (0.29), followed in descending order by that for Hispanics (0.37), White women (0.60), and Asians (0.69). Given the large disparities observed throughout Table 5.21, goal-setters may want to consider adjusting baseline estimates of M/W/DBE availability upward to account for the continuing effects of discrimination.<sup>154</sup>

### E. Evidence from The Survey of Minority-Owned and Women-Owned Business Enterprises

As a further check on the statistical findings in Chapter V, we present evidence from a Census Bureau data collection effort dedicated to M/W/DBEs. The Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO), formerly known as the *Surveys of Minority- and Women-Owned Business Enterprises* (SMWOBE), collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups. This survey has been conducted every five years since 1972 as part of the *Economic Censuses* program. Preliminary data from the 2002 SBO have just recently become available.<sup>155</sup>

Unlike most other business statistics, including the other components of the *Economic Censuses*, the unit of analysis in the SBO is the firm, rather than the establishment. The SBO estimates are created by matching data collected from income tax returns by the Internal Revenue Service with Social Security Administration data on race and ethnicity, and supplementing this information using statistical sampling methods. The unique field for conducting this matching is a person's Social Security Number (SSN) or the Employer Identification Number (EIN), as reported on the tax return.<sup>156</sup>

#### 1. Minority-Owned and Women-Owned Establishments

The SBO presents information on women and four groups of minorities—Blacks, Hispanics, Asians and Pacific Islanders, and Native Americans (including American Indians, Eskimos, and Aleuts). The 2002 SBO also includes comparative information for non-minority-owned, non-women-owned firms.

<sup>154</sup> For example, 49 CFR § 26.45(d)(1)(ii), governing federal-aid transportation contracts, requires that a recipient estimate the availability of Disadvantaged Business Enterprises (almost entirely minority- and women-owned firms) but for the effects of discrimination. Using the last row of Table 5.21 as an example, it might be appropriate for a goal-setter to set goals up to 83 percent higher (*i.e.*  $18.9\% \div 10.3\% = 1.83$ ) than current availability levels in order to account for the ongoing effects of discrimination

<sup>155</sup> Complete results will not be available until late 2006.

<sup>156</sup> Prior to 2002, "C" corporations were not included in the SMWOBE universe because of technical difficulties. This has been rectified in the 2002 SBO. For more information, consult a discussion of SBO survey methodology at <http://www.census.gov/csd/sbo/intro2002SBO.htm>.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

The SBO also provides aggregate estimates of the number of minority-owned and women-owned firms and their annual sales and receipts. The SBO distinguishes employer firms from non-employer firms, and for the former also includes estimates of aggregate annual employment and payroll.

Although the SBO is more limited in the scope of industrial and geographic detail it provides compared to the PUMS or the CPS, it nevertheless contains a wealth of information on the character of minority and female business enterprise in the U.S as a whole as well as in the State of Colorado. In the remainder of this section we present preliminary 2002 SBO statistics for the United States as a whole as well as for the State of Colorado and calculate disparity ratios from them. We find that results in the SBO regarding disparities are consistent with our findings above using the PUMS and the CPS.

Panel A in Tables 5.22 and 5.23 summarizes the preliminary 2002 SBO results for the United States and the State of Colorado, respectively. Panel A of Table 5.22, for example, shows in column (1) that there were 22.5 million firms in the U.S with, in column (2), overall sales and receipts of 8.844 trillion dollars. Of these 22.5 million firms, column (3) shows that 5.2 million had one or more employees. Column (4) shows a total of 55.8 million employees on the payroll of these 5.2 million firms, and finally column (5) shows total annual payroll expenses for these firms of \$1.639 trillion.<sup>157</sup> The remaining rows in Panel A provide comparable statistics for women-owned and minority-owned firms. For example, Table 5.22 shows that there were 1.2 million Black-owned firms counted in 2002, and that these 1.2 million firms registered \$92.7 billion in sales and receipts. It also shows that 94,862 of these Black-owned firms had one or more employees, and employed a total of 770,746 workers in 2002 with an annual payroll total of \$18.1 billion.

Panel A of Table 5.23 provides comparable information for the State of Colorado. In 2002 the Census Bureau counted 135,224 female-owned firms in Colorado<sup>158</sup>, 7,067 Black-owned firms, 24,054 Hispanic-owned firms, 10,917 Asian-owned firms, and 3,950 Native American-owned firms.

Panel B in each Table converts the figures in Panel A to percentage distributions within each column. For example, Column (1) in Panel B of Table 5.23 shows that Black-owned firms were 1.6 percent of all firms in Colorado in 2002, and female-owned firms were 29.9 percent of all firms in the State. Additionally, 5.3 percent of firms in the State were Hispanic-owned, 2.4 percent were Asian-owned, and 0.9 percent Native American-owned. Column (2) in Panel B provides the same percentage distribution for total sales and receipts. Table 5.23, for example, shows that although Black-owned firms were 1.6 percent of all firms in the State, they accounted for only 0.5 percent of total sales and revenues in the State. Similar results are obtained when the sample is restricted to firms with one or more paid employees. Column (3) in Table 5.23 shows that Black-owned employer firms accounted for 0.74 percent of all firms and 0.45 percent of all sales and receipts. Large disparities are observed not only for Blacks, but also for female-owned firms, Asian-owned firms, Hispanic-owned firms, and Native American-owned firms, in the

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<sup>157</sup> These figures exclude publicly-owned firms, foreign-owned firms, and not-for-profit firms.

<sup>158</sup> Additionally 63,149 equally male/female-owned firms were counted.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

United States as a whole as well as specifically in Colorado, and among all firms as well as among employer-only firms. These disparity ratios are presented in Panel C of each Table. Disparity ratios of 80 percent or less indicate disparate impact consistent with business discrimination against minority-owned and female-owned firms. In Colorado, disparity ratios fall beneath the 80 percent threshold in all but one instance.<sup>159</sup> However, the most severe disparities are observed among Black-owned, Native American-owned, and female-owned firms.

One further feature of Tables 5.22 and 5.23 is of interest. A comparison of the Panel B percentage distributions in Columns (5) and (6) versus Column (4) reveals that minority-owned and female-owned firms use significantly more employees per dollar of sales and have significantly higher payrolls per dollar of sales than do non-minority and male-owned firms. One explanation for this observation is that minority- and female-owned firms respond to marketplace discrimination by, among other things, employing additional inputs in the production process in the form of more labor (per unit of sales) and higher labor compensation (per unit of sales). This economically rational response to discrimination on the part of minority- and female-owned firms, ironically may reinforce their competitive disadvantage in the public and private marketplace where lowest cost is often the determining factor in the award of contracting and procurement opportunities.<sup>160</sup>

### 2. Small versus Large Establishments

The SBO also offers some insight into the disparities between large and small business enterprises in the United States generally and Colorado in particular, which is of value to Denver because of its Small Business Enterprise (SBE) Program. Specifically, the SBO distinguishes publicly-held firms from all other firms. While it is true that there are privately held firms which are larger than some publicly-held ones, the publicly-held vs. privately-held distinction is nevertheless a reasonable proxy for large versus small size. In the 2002 SBO for example, the average sales and receipts per firm for publicly-held firms in the U.S. was slightly more than \$28 million.<sup>161</sup> For firms with one or more paid employees, average sales and receipts per firm was more than \$39.1 million, and the average number of employees per firm was almost 157. Comparable figures are observed in Colorado where the figures are \$19.6 million, \$27.1 million, and 118, respectively.

Privately-held firms, both in Colorado and in the U.S. as a whole, are far smaller than this. Average sales and receipts per firm in the U.S. in 2002 was about \$393,000. In Colorado the figure was \$329,000. For firms with one or more paid employees, average sales and receipts was just under \$1.6 million per firm in the U.S. and just over \$1.2 million in Colorado. Employment size was just under 11 employees in the U.S. and just under 9 in Colorado.

In summary, for the U.S. as a whole, publicly-held firms were 2.6 percent of all businesses but claimed 61.4 percent of all sales and receipts. Privately-held firms were 97.4 percent of all

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<sup>159</sup> The exception is for Hispanic-owned firms with one or more paid employees., where the disparity ratio is 88.5 percent – still indicating some disparity but not falling beneath the 80 percent threshold.

<sup>160</sup> See also footnote 3.

<sup>161</sup> The preliminary SBO statistics also include foreign-owned firms and not-for-profit firms in this category.

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business but claimed only 38.6 percent of all sales and receipts. Among employers, publicly held firms were 7.4 percent of all businesses but claimed 63.8 percent of all sales and receipts, while privately held firms accounted for 92.6 percent of businesses but only 36.2 percent of all receipts.

In Colorado, publicly-held firms were 2.1 percent of all businesses but claimed 60.9 percent of all sales and receipts. Privately-held firms were 97.9 percent of all business but claimed only 39.1 percent of all sales and receipts. Among employers, publicly held firms were 6.4 percent of all businesses but claimed 63.0 percent of all sales and receipts, while privately held firms accounted for 93.6 percent of businesses but only 37.0 percent of all receipts.

# Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

## F. Tables

**Table 5.1. Annual Wage Earnings Regressions, All Industries, 2000**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.297 (182.62)	-0.297 (182.41)	-0.297 (182.71)
Hispanic	-0.214 (131.55)	-0.215 (131.54)	-0.215 (131.51)
Asian/Pacific Islanders	-0.290 (132.79)	-0.290 (132.52)	-0.290 (132.87)
Native American	-0.325 (67.09)	-0.325 (66.97)	-0.325 (67.11)
Other Race	-0.281 (86.14)	-0.282 (85.89)	-0.281 (86.15)
White Female	-0.358 (388.18)	-0.358 (387.05)	-0.358 (387.11)
Age	0.178 (654.77)	0.178 (654.79)	0.178 (654.79)
Age <sup>2</sup>	-0.002 (565.34)	-0.002 (565.36)	-0.002 (565.36)
Denver	0.051 (0.00)	0.004 (0.00)	0.013 (0.00)
Denver*Black		0.047 (1.72)	
Denver*Hispanic		0.117 (7.85)	0.108 (7.41)
Denver* Asian/Pacific Islanders		0.049 (1.63)	
Denver* Native American		0.090 (1.29)	
Denver*Other Race		0.068 (1.73)	
Denver*White Female		0.068 (6.27)	0.060 (5.69)
Education(16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry(88 categories)	Yes	Yes	Yes
N	3510329	3510329	3510329
R <sup>2</sup>	.442	.442	.442
F	17126	16515	16918

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number is the percentage difference in annual wages between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.2. Annual Wage Earnings Regressions, All Industries, 1979-1991

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.220 (205.51)	-0.220 (204.91)	-0.220 (204.93)
Hispanic	-0.167 (122.94)	-0.167 (122.26)	-0.167 (122.95)
Other Race	-0.194 (109.16)	-0.194 (108.59)	-0.194 (108.58)
White Female	-0.238 (370.66)	-0.238 (369.39)	-0.238 (370.66)
Age	0.057 (352.02)	0.057 (352.02)	0.057 (352.02)
Age <sup>2</sup>	-0.001 (286.35)	-0.001 (286.35)	-0.001 (286.35)
Denver	-0.068 (14.44)	-0.070 (11.86)	-0.065 (13.59)
Denver*Black		-0.034 (2.04)	-0.039 (2.37)
Denver*Hispanic		0.012 (0.97)	
Denver*Other Race		-0.054 (2.36)	-0.058 (2.59)
Denver*White Female		0.009 (1.21)	
Time (13 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	1868379	1868379	1868379
R <sup>2</sup>	.505	.505	.505
F	16117	15589	15849

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1979-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.3. Annual Wage Earnings Regressions, All Industries, 1992-2002**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.214 (129.58)	-0.214 (129.36)	-0.214 (129.63)
Hispanic	-0.206 (118.42)	-0.207 (118.18)	-0.207 (118.18)
Asian	-0.194 (79.03)	-0.194 (78.80)	-0.194 (79.08)
Native American	-0.171 (38.03)	-0.171 (37.86)	-0.171 (38.04)
White Female	-0.178 (174.62)	-0.179 (173.97)	-0.179 (174)
Age	0.053 (202.39)	0.053 (202.4)	0.053 (202.4)
Age <sup>2</sup>	-0.001 (166.97)	-0.001 (166.97)	-0.001 (166.97)
Denver	0.115 (14.93)	0.094 (10.05)	0.097 (10.81)
Denver*Black		0.014 (0.56)	
Denver*Hispanic		0.081 (5.50)	0.077 (5.38)
Denver*Asian		0.029 (1.05)	
Denver*Native American		0.021 (.46)	
Denver*White Female		0.022 (2.20)	0.019 (1.97)
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	933024	933024	933024
R <sup>2</sup>	.467	.467	.467
F	6326	6090	6230

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1992-2002 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.4. Annual Wage Earnings Regressions, Construction and Related Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.325 (48.47)	-0.325 (48.38)	-0.325 (48.48)
Hispanic	-0.158 (30.58)	-0.159 (30.64)	-0.159 (30.66)
Asian/Pacific Islanders	-0.194 (17.27)	-0.193 (17.08)	-0.194 (17.3)
Native American	-0.293 (21.57)	-0.292 (21.44)	-0.293 (21.57)
Other Race	-0.211 (17.81)	-0.210 (17.65)	-0.211 (17.81)
White Female	-0.399 (103.12)	-0.400 (102.44)	-0.399 (103.12)
Age	0.158 (169.33)	0.158 (169.34)	0.158 (169.35)
Age <sup>2</sup>	-0.002 (144.02)	-0.002 (144.03)	-0.002 (144.03)
Denver	0.367 (9.19)	0.343 (8.22)	0.341 (8.43)
Denver*Black		0.020 (0.16)	
Denver*Hispanic		0.086 (2.50)	0.087 (2.62)
Denver* Asian/Pacific Islanders		-0.181 (1.50)	
Denver* Native American		-0.084 (0.49)	
Denver*Other Race		-0.046 (0.40)	
Denver*White Female		0.017 (0.40)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	280323	280323	280323
R <sup>2</sup>	.276	.276	.277
F	1425	1319	1406

Source: See Table 5.1.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64 employed in the construction or construction-related professional services industries; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number is the percentage difference in annual wages between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.5. Annual Wage Earnings Regressions, Construction and Related Industries, 1979-1991**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.205 (44.52)	-0.205 (44.61)	-0.205 (44.61)
Hispanic	-0.134 (27.11)	-0.136 (27.24)	-0.136 (27.25)
Other Race	-0.091 (11.78)	-0.091 (11.67)	-0.091 (11.78)
White Female	-0.308 (95.03)	-0.309 (94.73)	-0.309 (94.73)
Age	0.073 (112.46)	0.073 (112.45)	0.073 (112.45)
Age <sup>2</sup>	-0.001 (89.76)	-0.001 (89.75)	-0.001 (89.75)
Denver	-0.016 (0.88)	-0.043 (2.22)	-0.044 (2.30)
Denver*Black		0.201 (2.31)	0.203 (2.33)
Denver*Hispanic		0.121 (2.97)	0.123 (3.01)
Denver*Other Race		-0.037 (0.49)	
Denver*White Female		0.096 (2.75)	0.097 (2.79)
Time (13 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	123230	123230	123230
R <sup>2</sup>	.400	.400	.400
F	1152	1091	1106

Source: See Table 5.2.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64 employed in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.6. Annual Wage Earnings Regressions, Construction and Related Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.196 (25.62)	-0.196 (25.58)	-0.196 (25.65)
Hispanic	-0.175 (29.6)	-0.177 (29.64)	-0.177 (29.63)
Asian	-0.116 (9.06)	-0.117 (9.08)	-0.117 (9.09)
Native American	-0.103 (7.23)	-0.105 (7.31)	-0.103 (7.22)
White Female	-0.245 (49.01)	-0.246 (48.84)	-0.246 (48.83)
Age	0.062 (61.08)	0.062 (61.08)	0.062 (61.07)
Age <sup>2</sup>	-0.001 (47.95)	-0.001 (47.95)	-0.001 (47.95)
Denver	0.003 (0.12)	-0.028 (0.98)	-0.024 (0.87)
Denver*Black		-0.002 (0.02)	
Denver*Hispanic		0.100 (2.57)	0.096 (2.49)
Denver*Asian		0.044 (0.29)	
Denver*Native American		0.139 (1.15)	
Denver*White Female		0.089 (2.03)	0.085 (1.96)
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	60581	60581	60581
R <sup>2</sup>	.373	.373	.373
F	434	409	424

Source: See Table 5.3.

Notes: (1) Universe is all private sector prime age wage and salary workers between age 16 and 64 employed in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual wages between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.7. Annual Business Owner Earnings Regressions, All Industries, 2000**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.280 (22.27)	-0.282 (22.34)	-0.280 (22.29)
Hispanic	-0.187 (17.05)	-0.188 (17.14)	-0.187 (17.05)
Asian/Pacific Islanders	-0.036 (2.33)	-0.037 (2.4)	-0.036 (2.34)
Native American	-0.380 (13.44)	-0.380 (13.39)	-0.380 (13.45)
Other Race	-0.261 (13.44)	-0.263 (13.45)	-0.261 (13.44)
White Female	-0.437 (83.89)	-0.438 (83.78)	-0.438 (83.75)
Age	0.165 (91.66)	0.165 (91.65)	0.165 (91.66)
Age <sup>2</sup>	-0.002 (81.87)	-0.002 (81.86)	-0.002 (81.86)
Denver	-0.086 (1.47)	-0.156 (2.58)	-0.128 (2.14)
Denver*Black		0.307 (1.44)	
Denver*Hispanic		0.214 (1.75)	
Denver*Asian/Pacific Islanders		0.103 (0.58)	
Denver*Native American		-0.311 (0.64)	
Denver*Other Race		0.180 (0.75)	
Denver*White Female		0.177 (2.92)	0.138 (2.42)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	350756	350756	350756
R <sup>2</sup>	.167	.167	.167
F	445	429	409

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number is the percentage difference in annual business earnings between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.8. Annual Business Owner Earnings Regressions, All Industries, 1979-1991**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.500 (15.65)	-0.499 (15.54)	-0.500 (15.65)
Hispanic	-0.279 (9.47)	-0.278 (9.4)	-0.279 (9.47)
Other Race	-0.328 (8.29)	-0.323 (8.12)	-0.323 (8.13)
White Female	-0.729 (68.07)	-0.729 (67.82)	-0.729 (68.08)
Age	0.205 (41.44)	0.205 (41.44)	0.205 (41.44)
Age <sup>2</sup>	-0.002 (36.51)	-0.002 (36.51)	-0.002 (36.51)
Denver	-0.298 (2.86)	-0.259 (2.07)	-0.281 (2.67)
Denver*Black		-0.605 (1.28)	
Denver*Hispanic		-0.082 (0.26)	
Denver*Other Race		-0.889 (2.68)	-0.885 (2.66)
Denver*White Female		-0.029 (0.16)	
Time (13 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	82094	82094	82094
R <sup>2</sup>	.177	.177	.177
F	152	147	151

Source: NERA calculations from the Annual Demographic (March) File of the 1979-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.9. Annual Business Owner Earnings Regressions, All Industries, 1992-2002**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.591 (14.85)	-0.587 (14.67)	-0.591 (14.85)
Hispanic	-0.390 (9.79)	-0.389 (9.72)	-0.390 (9.79)
Asian	-0.221 (3.41)	-0.228 (3.53)	-0.221 (3.41)
Native American	-0.511 (5.47)	-0.520 (5.59)	-0.511 (5.47)
White Female	-0.617 (31.34)	-0.617 (31.21)	-0.617 (31.34)
Age	0.230 (27.27)	0.230 (27.28)	0.230 (27.27)
Age <sup>2</sup>	-0.002 (23.81)	-0.002 (23.81)	-0.002 (23.81)
Denver	-0.095 (.55)	-0.122 (0.59)	-0.095 (0.55)
Denver*Black		-0.686 (1.63)	
Denver*Hispanic		0.027 (0.07)	
Denver*Asian		3.863 (1.72)	
Denver*Native American		18.473 (1.80)	
Denver*White Female		0.051 (0.20)	
Time (11 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	55639	55639	55639
R <sup>2</sup>	.128	.129	.128
F	64	62	64

Source: NERA calculations from the Annual Demographic (March) File of the 1992-2002 Current Population Survey microdata samples.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.10. Business Owner Earnings Regressions, Construction and Related Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.290 (9.02)	-0.289 (8.97)	-0.290 (9.02)
Hispanic	-0.145 (6.24)	-0.151 (6.50)	-0.151 (6.50)
Asian/Pacific Islanders	-0.056 (1.10)	-0.058 (1.14)	-0.057 (1.12)
Native American	-0.367 (6.79)	-0.369 (6.82)	-0.368 (6.80)
Other Race	-0.139 (2.97)	-0.137 (2.9)	-0.139 (2.97)
White Female	-0.513 (29.41)	-0.513 (29.16)	-0.513 (29.40)
Age	0.140 (34.49)	0.140 (34.5)	0.140 (34.51)
Age <sup>2</sup>	-0.001 (32.16)	-0.001 (32.17)	-0.001 (32.18)
Denver	0.122 (0.88)	0.070 (0.50)	0.071 (0.52)
Denver*Black		-0.113 (0.27)	
Denver*Hispanic		0.689 (2.63)	0.689 (2.65)
Denver*Asian/Pacific Islanders		0.250 (0.36)	
Denver*Native American		1.198 (0.58)	
Denver*Other Race		-0.202 (0.51)	
Denver*White Female		0.025 (0.14)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	56589	56589	56589
R <sup>2</sup>	.056	.056	.056
F	45	41	44

Source: See Table 5.7.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number is the percentage difference in annual business earnings between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.11. Business Owner Earnings Regressions, Construction and Related Industries, 1979-1991**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.428 (5.73)	-0.429 (5.76)	-0.428 (5.74)
Hispanic	-0.252 (3.96)	-0.255 (4)	-0.252 (3.97)
Other Race	-0.208 (1.79)	-0.172 (1.44)	-0.171 (1.44)
White Female	-0.835 (21.63)	-0.835 (21.45)	-0.835 (21.66)
Age	0.179 (16.58)	0.179 (16.6)	0.179 (16.61)
Age <sup>2</sup>	-0.002 (15.29)	-0.002 (15.32)	-0.002 (15.32)
Denver	-0.334 (1.37)	-0.287 (1.09)	-0.271 (1.06)
Denver*Black		1.384 (0.48)	
Denver*Hispanic		0.329 (0.45)	
Denver*Other Race		-1.000 (4.74)	-1.000 (4.76)
Denver*White Female		-0.172 (0.28)	
Time (13 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	12577	12577	12577
R <sup>2</sup>	.077	.078	.077
F	14.78	14.39	14.78

Source: See Table 5.8.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.12. Business Owner Earnings Regressions, Construction and Related Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.322 (2.39)	-0.306 (2.24)	-0.322 (2.39)
Hispanic	-0.144 (1.37)	-0.147 (1.39)	-0.144 (1.37)
Asian	-0.181 (0.85)	-0.180 (0.85)	-0.181 (0.85)
Native American	-0.208 (0.76)	-0.227 (0.83)	-0.208 (0.76)
White Female	-0.839 (15.73)	-0.836 (15.43)	-0.839 (15.73)
Age	0.190 (8.71)	0.190 (8.73)	0.190 (8.71)
Age <sup>2</sup>	-0.002 (7.9)	-0.002 (7.91)	-0.002 (7.9)
Denver	-0.159 (0.41)	0.009 (0.02)	-0.159 (0.41)
Denver*Black		-0.943 (1.57)	
Denver*Hispanic		0.060 (0.08)	
Denver*Asian			
Denver*Native American		3.865 (0.61)	
Denver*White Female		-0.828 (1.73)	
Time (11 categories)	Yes	Yes	Yes
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	8446	8446	8446
R <sup>2</sup>	.064	.065	.064
F	6.90	6.77	6.90

Source: See Table 5.9.

Notes: (1) Universe is all persons in the private sector with positive business income between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number is the percentage difference in annual business earnings between a given group and white men; (3) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.13. Self-Employment Rates in 2000 for Selected Race and Sex Groups: All Industries; United States and the City and County of Denver**

Race/Sex	U.S. (%)	City and County of Denver (%)	Percent Difference from White male
Black	4.8	6.1	-55.8%
Hispanic	6.8	4.4	-68.1%
Asian	9.8	10.9	-21.0%
Native American	7.7	4.7	-65.9%
Multiple Races	8.9	8.1	-41.3%
White female	7.9	10.5	-23.9%
White male	13.1	13.8	

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

**Table 5.14. Self-Employment Rates in 2000 for Selected Race and Sex Groups: Construction and Related Industries; United States and the City and County of Denver**

Race/Sex	U.S. (%)	City and County of Denver (%)	Percent Difference from White male
Black	14.0	30.3	28.4%
Hispanic	12.2	7.3	-69.1%
Asian	16.0	12.4	-47.5%
Native American	15.3	3.3	-86.0%
Multiple Races	19.6	19.4	-17.8%
White female	14.2	12.5	-47.0%
White male	24.3	23.6	

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.15. Business Formation Regressions, All Industries, 2000

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.045 (99.30)	-0.045 (99.16)	-0.045 (99.33)
Hispanic	-0.035 (80.83)	-0.035 (79.89)	-0.035 (79.89)
Asian/Pacific Islanders	-0.015 (24.29)	-0.015 (24.37)	-0.015 (24.37)
Native American	-0.034 (26.48)	-0.034 (26.33)	-0.034 (26.49)
Other Race	-0.018 (19.18)	-0.018 (19.05)	-0.018 (19.17)
White Female	-0.029 (101.52)	-0.029 (101.64)	-0.029 (101.65)
Age	0.010 (143.25)	0.010 (143.24)	0.010 (143.24)
Age <sup>2</sup>	-0.000 (101.43)	-0.000 (101.42)	-0.000 (101.42)
Denver	-0.011 (4.14)	-0.016 (5.34)	-0.015 (5.35)
Denver*Black		0.010 (1.18)	
Denver*Hispanic		-0.017 (4.22)	-0.017 (4.27)
Denver* Asian/Pacific Islanders		0.020 (2.31)	0.019 (2.29)
Denver* Native American		-0.024 (1.20)	
Denver*Other Race		-0.004 (0.36)	
Denver*White Female		0.019 (6.37)	0.019 (6.43)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	4032101	4032101	4032101
Pseudo R <sup>2</sup>	0.158	0.158	0.158
Chi <sup>2</sup>	4.2e+05	4.2e+05	4.2e+05
Log Likelihood	-1120406	-1120363	-1120365

Source: NERA calculations from the 2000 Decennial Census Five Percent Public Use Microdata Samples.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and white men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.16. Business Formation Regressions, All Industries, 1979-1991**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.037 (93.57)	-0.037 (93.51)	-0.037 (93.6)
Hispanic	-0.028 (58.65)	-0.028 (58.43)	-0.028 (58.61)
Other Race	-0.016 (25.89)	-0.016 (25.97)	-0.016 (25.9)
White Female	-0.027 (100.93)	-0.027 (101)	-0.027 (100.97)
Age	0.011 (178.77)	0.011 (178.77)	0.011 (178.77)
Age <sup>2</sup>	-0.000 (139.88)	-0.000 (139.87)	-0.000 (139.87)
Denver	-0.002 (1.27)	-0.008 (3.86)	-0.007 (3.23)
Denver*Black		0.018 (1.87)	
Denver*Hispanic		0.008 (1.21)	
Denver*Other Race		0.020 (1.92)	
Denver*White Female		0.017 (5.13)	0.014 (4.65)
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	2684590	2684590	2684590
Pseudo R <sup>2</sup>	.245	.245	.245
Chi <sup>2</sup>	4.4e+05	4.4e+05	4.4e+05
Log Likelihood	-671396	-671381	-671385

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1979-1991 Current Population Survey microdata samples.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and white men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.17. Business Formation Regressions, All Industries, 1992-2002

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.048 (78.36)	-0.048 (78.23)	-0.048 (78.41)
Hispanic	-0.041 (61.78)	-0.041 (61.60)	-0.041 (61.62)
Asian	-0.015 (16.51)	-0.015 (16.46)	-0.015 (16.54)
Native American	-0.030 (19.24)	-0.030 (19.06)	-0.030 (19.25)
White Female	-0.026 (62.43)	-0.026 (62.46)	-0.026 (62.48)
Age	0.013 (125.43)	0.013 (125.43)	0.013 (125.43)
Age <sup>2</sup>	-0.000 (89.59)	-0.000 (89.59)	-0.000 (89.59)
Denver		-0.009 (2.85)	-0.009 (3.17)
Denver*Black		-0.007 (0.50)	
Denver*Hispanic		0.017 (2.33)	0.018 (2.46)
Denver*Asian		-0.003 (0.21)	
Denver*Native American		-0.032 (1.57)	
Denver*White Female		0.014 (3.30)	0.015 (3.56)
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	1924167	1924167	1924167
Pseudo R <sup>2</sup>	.215	.215	.215
Chi <sup>2</sup>	3.1e+05	3.1e+05	3.1e+05
Log Likelihood	-568247	-568238	-568239

Source: NERA calculations from the Merged Outgoing Rotation Groups of the 1992-2002 Current Population.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and white men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.18. Business Formation Regressions, Construction and Related Industries, 2000**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.097 (30.10)	-0.098 (30.19)	-0.098 (30.19)
Hispanic	-0.076 (31.01)	-0.075 (30.37)	-0.075 (30.37)
Asian/Pacific Islanders	-0.057 (10.51)	-0.057 (10.49)	-0.057 (10.49)
Native American	-0.080 (12.12)	-0.079 (12)	-0.080 (12.11)
Other Race	-0.031 (5.47)	-0.031 (5.44)	-0.031 (5.46)
White Female	-0.085 (39.94)	-0.085 (39.69)	-0.085 (39.94)
Age	0.025 (60.05)	0.025 (60.04)	0.025 (60.04)
Age <sup>2</sup>	-0.000 (44.02)	-0.000 (44.01)	-0.000 (44.01)
Denver	0.025 (1.55)	0.032 (1.87)	0.032 (1.93)
Denver*Black		0.168 (2.81)	0.167 (2.81)
Denver*Hispanic		-0.049 (2.93)	-0.050 (3.00)
Denver* Asian/Pacific Islanders		0.032 (0.45)	
Denver* Native American		-0.086 (0.95)	
Denver*Other Race		0.005 (0.08)	
Denver*White Female		0.003 (0.15)	
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	343116	343116	343116
Pseudo R <sup>2</sup>	.076	.076	.076
Chi <sup>2</sup>	27017	27036	27035
Log Likelihood	-165078	-165068	-165069

Source: See Table 5.15.

Notes: (1) Universe is all private sector prime age labor force participants in the construction sector between age 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and white men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes persons identifying themselves as belonging in more than one racial category; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

Table 5.19. Business Formation Regressions, Construction and Related Industries, 1979-1991

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.085 (25.09)	-0.085 (25.17)	-0.085 (25.17)
Hispanic	-0.064 (16.77)	-0.064 (16.55)	-0.064 (16.76)
Other Race	-0.095 (18.22)	-0.095 (18.29)	-0.095 (18.22)
White Female	-0.099 (36.88)	-0.099 (36.74)	-0.099 (36.87)
Age	0.028 (61.24)	0.028 (61.23)	0.028 (61.24)
Age <sup>2</sup>	-0.000 (49.48)	-0.000 (49.47)	-0.000 (49.47)
Denver	-0.030 (2.43)	-0.034 (2.61)	-0.032 (2.66)
Denver*Black		0.168 (2.37)	0.167 (2.35)
Denver*Hispanic		-0.031 (0.88)	
Denver*Other Race		0.149 (1.91)	
Denver*White Female		0.014 (0.40)	
Time (6 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	209444	209444	209444
Pseudo R <sup>2</sup>	.083	.083	.082
Chi <sup>2</sup>	16835	16845	16840
Log Likelihood	-93575	-93570	-93572

Source: See Table 5.16.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and white men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.20. Business Formation Regressions, Construction and Related Industries, 1992-2002**

Independent Variables	Specification		
	(1)	(2)	(3)
Black	-0.110 (23.82)	-0.110 (23.76)	-0.110 (23.82)
Hispanic	-0.091 (21.00)	-0.091 (20.76)	-0.091 (21.00)
Asian	-0.075 (8.94)	-0.074 (8.83)	-0.075 (8.94)
Native American	-0.089 (10.10)	-0.089 (10.06)	-0.089 (10.10)
White Female	-0.048 (13.72)	-0.048 (13.68)	-0.048 (13.72)
Age	0.033 (48.79)	0.033 (48.79)	0.033 (48.79)
Age <sup>2</sup>	-0.000 (36.89)	-0.000 (36.9)	-0.000 (36.89)
Denver	0.006 (0.33)	0.035 (1.96)	0.006 (0.33)
Denver*Black		-0.025 (0.26)	
Denver*Hispanic		-0.014 (0.43)	
Denver*Asian			
Denver*Native American		0.022 (0.22)	
Denver*White Female		0.012 (0.36)	
Time (11 categories)	Yes	Yes	Yes
Education (continuous)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (49 categories)	Yes	Yes	Yes
N	153805	153805	153805
Pseudo R <sup>2</sup>	.090	.090	.090
Chi <sup>2</sup>	15294	15300	15294
Log Likelihood	-77525	-77523	-77525

Source: See Table 5.17.

Notes: (1) Universe is all private sector prime age labor force participants between age 16 and 64 in the construction or construction-related professional services industries; observations with imputed earnings are excluded where identified; (2) Reported number represents the percentage point probability difference in business ownership rates between a given group and white men, evaluated at the mean business ownership rate for the estimation sample; (3) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (4) "Other Race" includes Hispanics, Asian/Pacific Islanders, and American Indians/Alaska Natives; (5) Geography is defined based on place of residence.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.21. Actual and Potential Business Formation Rates—Denver Construction and Consulting Markets**

<b>Race/Sex</b>	<b>Business Formation Rate (%)</b>	<b>Potential Business Formation Rate (%)</b>	<b>Disparity Ratio</b>
	(1)	(2)	(3)
Black	30.3	23.4	1.295
Hispanic	7.3	19.8	0.369
Asian/Pacific Islander	12.4	18.1	0.685
American Indian/Alaska Native	3.3	11.3	0.292
Multiple races reported	19.4	22.5	0.862
White female	12.5	21.0	0.595
All minority and female	10.3	18.9	0.545

Notes: Figures in column (1) are average self-employment rates weighted using PUMS population-based person weights. Figures in column (2) are derived from combining the figure in column (1) with the corresponding result from Table 5.18. Column (3) is simply column (1) divided by column (2).

Source: 2000: Five Percent PUMS. See Table 5.18.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.22. Disparity Ratios from Preliminary 2002 Survey of Business Owners—United States—All Industries**

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. Levels</b>						
United States	22,485,449	8,844,543,267	5,174,292	8,099,243,938	55,757,451	1,638,934,633
Female	6,492,795	950,600,079	917,946	813,188,494	7,224,246	175,863,498
Male	13,185,703	7,096,465,049	3,525,524	6,598,978,228	42,677,931	1,327,515,579
Equally male-/female-owned	2,691,722	731,051,431	717,825	626,831,909	5,658,953	129,616,475
Hispanic	1,574,159	226,468,398	199,725	183,964,615	1,546,092	37,062,622
Non-Hispanic	20,796,061	8,551,648,161	4,961,570	7,855,034,016	54,015,038	1,595,932,929
White	19,894,823	8,303,716,399	4,712,168	7,629,211,216	52,209,027	1,548,757,745
Black	1,197,988	92,681,562	94,862	69,779,134	770,746	18,065,552
American Indian and Alaska Native	206,125	26,395,707	25,101	21,272,903	187,407	4,753,375
Asian	1,105,329	343,321,501	319,911	307,555,836	2,293,694	58,624,239
Native Hawaiian and Other Pacific Islander	32,299	5,220,795	4,333	4,326,420	36,710	1,011,933
<b>Panel B. Column Percentages</b>						
United States	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	28.88%	10.75%	17.74%	10.04%	12.96%	10.73%
Male	58.64%	80.24%	68.14%	81.48%	76.54%	81.00%
Equally male-/female-owned	11.97%	8.27%	13.87%	7.74%	10.15%	7.91%
Hispanic	7.00%	2.56%	3.86%	2.27%	2.77%	2.26%
Non-Hispanic	92.49%	96.69%	95.89%	96.98%	96.88%	97.38%
White	88.48%	93.89%	91.07%	94.20%	93.64%	94.50%
Black	5.33%	1.05%	1.83%	0.86%	1.38%	1.10%
American Indian and Alaska Native	0.92%	0.30%	0.49%	0.26%	0.34%	0.29%
Asian	4.92%	3.88%	6.18%	3.80%	4.11%	3.58%
Native Hawaiian and Other Pacific Islander	0.14%	0.06%	0.08%	0.05%	0.07%	0.06%
<b>Panel C. Disparity Ratios</b>						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		37.22%		56.60%	73.03%	60.49%
Male		136.82%		119.58%	112.34%	118.88%
Equally male-/female-owned		69.05%		55.79%	73.16%	57.01%
Hispanic		36.58%		58.84%	71.84%	58.59%
Non-Hispanic		104.54%		101.14%	101.03%	101.55%
White		106.11%		103.43%	102.82%	103.77%
Black		19.67%		46.99%	75.40%	60.12%
American Indian and Alaska Native		32.56%		54.14%	69.29%	59.79%
Asian		78.97%		61.42%	66.54%	57.85%
Native Hawaiian and Other Pacific Islander		41.09%		63.79%	78.62%	73.73%

Source: Author's calculations using 2002 SBO, <http://www.census.gov/csd/sbo/state/st00.HTM>. Excludes publicly-owned, foreign-owned, and not-for-profit firms.

## Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings

**Table 5.23. Disparity Ratios from Preliminary 2002 Survey of Business Owners—State of Colorado—All Industries**

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. Levels</b>						
Colorado	452,924	149,011,001	108,379	134,174,546	947,346	28,498,057
Female	135,224	16,395,489	21,498	13,700,750	128,810	3,118,693
Male	253,302	116,196,268	69,709	106,626,276	697,055	22,565,935
Equally male-/female-owned	63,149	15,489,827	17,900	13,255,102	120,514	2,681,731
Hispanic	24,054	5,113,694	4,075	4,465,665	32,465	807,423
Non-Hispanic	427,621	142,967,890	105,032	129,116,463	913,913	27,558,936
White	429,811	144,108,555	104,010	130,199,102	910,344	27,529,698
Black	7,067	774,543	797	607,179	6,209	145,542
American Indian and Alaska Native	3,950	490,194	599	385,779	5,466	108,967
Asian	10,917	2,553,588	3,449	2,259,017	21,955	516,931
Native Hawaiian and Other Pacific Islander	413	35,668	54	27,606	N/A	11,548
<b>Panel B. Column Percentages</b>						
Colorado	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Female	29.86%	11.00%	19.84%	10.21%	13.60%	10.94%
Male	55.93%	77.98%	64.32%	79.47%	73.58%	79.18%
Equally male-/female-owned	13.94%	10.40%	16.52%	9.88%	12.72%	9.41%
Hispanic	5.31%	3.43%	3.76%	3.33%	3.43%	2.83%
Non-Hispanic	94.41%	95.94%	96.91%	96.23%	96.47%	96.70%
White	94.90%	96.71%	95.97%	97.04%	96.09%	96.60%
Black	1.56%	0.52%	0.74%	0.45%	0.66%	0.51%
American Indian and Alaska Native	0.87%	0.33%	0.55%	0.29%	0.58%	0.38%
Asian	2.41%	1.71%	3.18%	1.68%	2.32%	1.81%
Native Hawaiian and Other Pacific Islander	0.09%	0.02%	0.05%	0.02%	N/A	0.04%
<b>Panel C. Disparity Ratios</b>						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Female		36.85%		51.48%	68.55%	55.17%
Male		139.43%		123.55%	114.40%	123.11%
Equally male-/female-owned		74.56%		59.81%	77.02%	56.98%
Hispanic		64.62%		88.52%	91.14%	75.35%
Non-Hispanic		101.62%		99.30%	99.55%	99.79%
White		101.91%		101.11%	100.13%	100.66%
Black		33.31%		61.54%	89.13%	69.45%
American Indian and Alaska Native		37.72%		52.02%	104.39%	69.18%
Asian		71.10%		52.91%	72.82%	57.00%
Native Hawaiian and Other Pacific Islander		26.25%		41.29%	N/A	81.33%

Source: Author's calculations using 2002 SBO, <http://www.census.gov/csd/sbo/state/st00.HTM>. Excludes publicly-owned, foreign-owned, and not-for-profit firms.

### VI. Statistical Disparities in Capital Markets

Discrimination occurs whenever the terms of a transaction are affected by personal characteristics of the participants that are not relevant to the transaction. Among such characteristics, the most commonly considered are race and gender. In labor markets this might translate into equally productive workers in similar jobs being paid different salaries because of their race or gender. In credit markets it might translate into loan approvals differing across racial groups with otherwise similar financial backgrounds.

In this Chapter, we examine whether there is evidence consistent with the presence of discrimination in the small business credit market against minority-owned or women-owned small businesses. Discrimination in the credit market against minority-owned small businesses can have an important effect on the likelihood that such businesses will succeed. Moreover, discrimination in the credit market might even prevent the business from opening in the first place.

In our analysis, we use data from the Federal Reserve Board to examine the existence or otherwise of discrimination in the small business credit market for 1993 and 1998.<sup>162</sup> These surveys are based on a large representative sample of firms with fewer than 500 employees and are administered by the Federal Reserve Board and the U.S. Small Business Administration. In addition we report the results of a complementary survey we conducted in the Denver MSA and elsewhere in Colorado in 2005.

These data provide qualitative and quantitative evidence consistent with the presence of discrimination against minorities in the credit market for small businesses. For example, we find that Black-owned firms are much more likely to report being seriously concerned with credit market problems and report being less likely to apply for credit because they fear the loan would be denied. Moreover, after controlling for a large number of characteristics of the firms, we find that Black-owned firms and other minority-owned firms are substantially and statistically significantly more likely to be denied credit than are White-owned firms. We find some evidence that women are discriminated against in this market as well. The principal results may be summarized as follows:

- Minority-owned firms were more likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied.
- When minority-owned firms did apply for a loan their loan requests were substantially more likely to be denied than non-minorities, even when differences in factors like size and credit history are accounted for.
- When minority-owned firms *did* receive a loan they were obligated to pay higher interest rates on the loan than was true of comparable White-owned firms.

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<sup>162</sup> This survey is conducted every five years. Results from the 2003 survey data are expected to be released sometime in 2006.

## Statistical Disparities in Capital Markets

- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for White-owned firms.
- A greater share of minority-owned firms believes that the availability of credit is the most important issue likely to confront their firm in the upcoming year.
- There is no evidence that discrimination in the market for credit is significantly different in Denver, in Colorado, in the Western census region, or in the construction industries than it is in the nation or the economy as a whole.
- There is no evidence that the level of discrimination in the market for credit has diminished during the 1990s or the 2000s. Evidence from the 1998 and later is entirely consistent with that from 1993 and earlier.

The structure of this Chapter is as follows. First, we outline the main theories of discrimination and discuss how they might be tested. Second, we examine the evidence on the existence of capital/liquidity constraints facing individuals in the mortgage market, households in the non-mortgage loan market, and for small businesses in the commercial credit market. Next, we describe the data files used in the remainder of the chapter and then examine in more detail the problems faced by minority-owned firms in obtaining credit. Fourth, we provide a series of answers to criticisms. Finally, we present our conclusions.

### A. Theoretical Framework and Review of the Literature

Most recent economic studies of discrimination draw on the analyses contained in Gary Becker's (1957) *The Economics of Discrimination*. Becker's main contribution was to translate the notion of discrimination into financial terms. Discrimination, in this view, results from the desire of owners, workers, or customers to avoid contact with certain groups. This being the case, transactions with the undesired groups would require more favorable terms than those that occur with a desired group. Assume that the primary objective of a financial institution is to maximize their expected profits. The expected return on a loan will depend on the interest rate charged and the likelihood that a borrower defaults. The financial institution would approve any loan for which the expected return on the loan exceeded the cost of the funds to the institution. Discrimination would then result in either (a) higher interest rates being charged to undesired groups having otherwise similar characteristics to the desired group or (b) requiring better characteristics (i.e. a lower expected default rate) from the undesired group at any given interest rate. In other words, the disadvantaged group might either be appraised more rigorously or they would be given less favorable terms on the loan.

A similar connection between the likelihood of loan approval and the race of the applicant might also be found if firms employ statistical discrimination. In this case, firms use personal characteristics—such as race or gender—to infer the likelihood of default on the loan. If experience has suggested that certain groups of individuals—defined by race or gender—are on average more or less likely to default, then the firm may use this information to economize on the costs of gathering more directly relevant information. Hence discrimination would not reflect the preferences of the owner but would rather reflect an attempt to minimize costs. Empirically,

the racial characteristics of the applicant could proxy for unobserved characteristics of their creditworthiness.

There has been an active debate on the question of whether banks discriminate against minority applicants for mortgages. In particular, banks were often accused of “redlining”—that is, not granting loans for properties located in certain areas. To analyze that issue, the Home Mortgage Disclosure Act was passed to require lenders to disclose information on the geographic location of their home mortgage loans. These data, however, were not sufficient to assess whether or not there was discrimination in the market for mortgage loans.

In 1992 researchers at the Federal Reserve Bank of Boston collected additional information from mortgage lenders (Munnell et al., 1996). In particular, they tried to collect any information that might be deemed economically relevant to whether a loan would be approved. In the raw data Whites had 10 percent of their loans rejected whereas rejection rates were 28 percent for both Blacks and Hispanics. Even after the creditworthiness of the borrowers (including the amount of the debt, debt-to-income ratio, credit history, loan characteristics, etc.) were controlled for, Blacks were still found to be 7 percentage points less likely to be granted the loan. A variety of criticisms have been launched at this study (see, for example, Horne, 1994; Day and Liebowitz, 1998; Harrison, 1998). Responses to these criticisms are found in Browne and Tootell (1995).

In addition to the type of statistical analysis done in the Munnell et al. (1996) study, two other approaches have been used to measure discrimination in mortgage markets. First, Federal Reserve regulators can examine a lending institution’s files to try to identify any cases where a loan rejection looks suspicious. Second, audit studies have been used with paired “identical” applicants. Such studies have also found evidence of discrimination (c.f. Cloud and Galster, 1993) although the audit approach is not without its critics (Heckman, 1998).

Another relevant literature is concerned with the severity of liquidity constraints affecting consumers in non-mortgage credit markets. A consumer is said to be liquidity-constrained when lenders refuse to make the household a loan or offer the household less than they wished to borrow (Ferri and Simon, 1997). Many studies have suggested that roughly twenty percent of U.S. families are liquidity-constrained (cf. Hall and Mishkin, 1982; and Jappelli, 1990). As might be expected, liquidity-constrained households are typically younger, with less wealth and accumulated savings (Hayashi, 1985; and Jappelli, 1990). The research shows non-White households to be substantially more likely to be liquidity-constrained even when a variety of financial characteristics of households are controlled for (Jappelli, 1990; and Ferri and Simon, 1997).

We now turn to the more directly relevant evidence on liquidity constraints facing small businesses. Just like individuals and households, businesses also face liquidity constraints. Liquidity constraints can be a problem in starting a business as well as in running it. Discrimination in the credit market against minority-owned small businesses can have a devastating effect on the success of such businesses. Further, discrimination in the credit market might even prevent them from opening in the first place. Evidence to that effect is provided in the economics literature on self-employment. Evans and Leighton (1989) and Evans and Jovanovic (1989) have argued formally that entrepreneurs face difficulties borrowing money. As in the discussion above, such individuals are labeled liquidity constrained by economists. Using data from the National Longitudinal Survey of Youth from 1966-1981 and the Current

## Statistical Disparities in Capital Markets

Population Surveys from 1968-1987, these authors found that, all else equal, people with greater family assets are more likely to switch to self-employment from employment. Blanchflower and Oswald (1998) studied the probability that an individual reports him or herself as self-employed. Consistent with the existence of capital constraints on potential entrepreneurs, their econometric estimates imply that the probability of being self-employed depends positively upon whether the individual ever received an inheritance or gift. Second, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Holtz-Eakin et al. (1994a, 1994b) examine flows in and out of self-employment and find that inheritances both raise entry and slow exit. Black, de Meza and Jeffreys (1996) find that housing equity plays an important role in shaping the supply of entrepreneurs. Lindh and Ohlsson (1996) suggest that the probability of being self-employed increases when people receive windfall gains in the form of lottery winnings and inheritances.

In his 2003 expert report in *Builders Association of Greater Chicago v. the City of Chicago*,<sup>163</sup> Timothy Bates argued eloquently that “from its origins, the black-business community has been constrained by limited access to credit, limited opportunities for education and training, and White stereotypes about suitable roles for minorities in society (Bates, 1989; Bates, 1993; Bates, 1973). Indeed, as Bates points out, Gunnar Myrdal observed,

The Negro businessman ... encounters greater difficulties than whites in securing credit. This is partly due to the marginal position of Negro business. It is also partly due to prejudicial opinions among whites concerning business ability and personal reliability of Negroes. In either case a vicious circle is in operation keeping Negro business down” (Myrdal, 1944, 308).

Bates goes on to argue that commercial banks lend most easily to White males who possess significant amounts of equity capital to invest in their businesses (Bates, 1991a). Apart from banks, an important source of debt capital for small business is likely to be family and friends, but the low wealth of Black households reduces the availability of debt capital that family and friends could invest in small business operations (Bates, 1993; Bates, 1991b).

Additional evidence indicates that capital constraints for Black-owned businesses are particularly large. For instance, Bates (1989) finds that racial differences in levels of financial capital do have a significant effect upon racial patterns in business failure rates. Fairlie and Meyer (1996) find that racial groups with higher levels of unearned income have higher levels of self-employment. In an important paper Fairlie (1998) uses data from the 1968-1989 Panel Study of Income Dynamics to examine why Black men are one-third as likely to be self-employed as White men. The author finds that the large discrepancy is due to a Black transition rate into self-employment that is approximately one half the White rate and a Black transition rate out of self-employment that is twice the White rate. He finds that capital constraints—measured by interest income and lump-sum cash payments—significantly reduce the flow into self-employment from wage/salary work, with this effect being nearly seven times larger for Black self-employed than for White self-employed. Fairlie then attempts to decompose the racial gap in the transition rate into self-employment into a part due to differences in the distributions of individual characteristics and a part due to differences in the processes generating the transitions. He finds that differences in the distributions of characteristics between Blacks and Whites explain only a part of the racial gap in

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<sup>163</sup> 298 F.Supp.2d 725 (N.D.Ill. 2003).

the transition rate into self-employment. In addition, racial differences in specific variables, such as levels of assets and the likelihood of having a self-employed father provide important contributions to the gap. He concludes, however, “the remaining part of the gap is large and is due to racial differences in the coefficients. Unfortunately, we know much less about the causes of these differences. They may be partly caused by lending or consumer discrimination against blacks” (1998, p.14).

There is also research into racial differences in access to credit among small businesses. Cavalluzzo and Cavalluzzo (1998) use data from the 1988-1989 National Survey of Small Business Finances (NSSBF), conducted by the Board of Governors of the Federal Reserve System, to analyze differences in application rates, denial rates, and other outcomes by race and gender in a manner similar to the econometric models reported in this Study. This paper documents that a large discrepancy does exist in credit access between Whites and minority-owned firms that cannot be explained by a handful of characteristics of firms. Unfortunately, the earlier NSSBF data did not over-sample minority-owned firms and included limited information on a firm’s credit history and that of its owner, reducing the ability to provide a powerful test of the causal impact of race on loan decisions. In an unpublished paper, Cole (1998) uses the 1993 NSSBF and estimates models of loan denials similar in nature to those discussed in this report.

Our Study reported below in this chapter also takes advantage, primarily, of the 1993 NSSBF data and the 1998 Survey of Small Business Finances (SSBF) data, both of which have a larger sample of minority-owned firms and better information on creditworthiness than did the earlier NSSBF data.<sup>164</sup> The 1993 and 1998 datasets also contains information that can be used to conduct an extensive set of specification checks designed to weigh the possibility that our results are subject to alternative interpretations.

### **B. Empirical Framework and Description of the Data**

Disputes about discrimination typically originate in differences in the average outcomes for two groups. Suppose, for example, Black-owned firms are less likely than White-owned firms to be approved for a loan. Is such a difference due to discrimination? To answer this question it is necessary to compare Black and White firms that have similar risks of default. In effect, we want to know what fraction of the Black firms’ loans would be approved if they had the same creditworthiness as the White firms. A standard approach to this problem is to statistically control for characteristics of the firms that are deemed to be relevant to the loan decision. If we compare firms that have the same likelihood of default and yet find the Black firms to be less likely to be approved, then it would be appropriate to attribute such a difference to discrimination.

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<sup>164</sup>Although the 1998 file has the benefit of being the most recent available, it has four disadvantages compared to the 1993 file. First, sample size is smaller (3,651 firms compared with 4,637 in 1993). Second, minority-owned firms were not over-sampled as in 1993. Third, the wording of the main question concerning loan denial was more inclusive in 1993 than it is in 1998. In 1998, it was restricted to new loans whereas in 1993 it covered all loans (i.e. new loans plus renewals, extensions, and/or modifications of existing loans). Therefore, disaggregation of results by geography is more restricted in 1998 due to the resulting smaller sample sizes. Despite these differences, however, the results from both data sets are entirely consistent with one another.

## Statistical Disparities in Capital Markets

Following in the spirit of Munnell et al. (1996) we will estimate the following loan denial equation:

$$(1) \quad \text{Prob}(D_i = 1) = \Phi(\beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i),$$

where  $D_i$  represents an indicator variable for loan denial for firm  $i$  (that is, 1 if the loan is denied and 0 if accepted),  $CW$  represents measures of creditworthiness,  $X$  represents other firm characteristics,  $R$  represents the race of the firm's ownership, and  $\Phi$  is the cumulative normal probability distribution.<sup>165</sup> This econometric model can be thought of as a reduced form version of a structural model that incorporates firms' demand and financial institutions' supply of loan funds as a function of the interest rate and other factors.<sup>166</sup> Within the framework of this model, a positive estimate of  $\beta_3$  is consistent with the presence of discrimination.<sup>167</sup>

The 1993 NSSBF data contain substantial information regarding credit availability on a nationally representative sample of small businesses with fewer than 500 employees. The survey was conducted during 1994-95 for the Board of Governors of the Federal Reserve System and the U.S. Small Business Administration; the data relate to the years 1992 and 1993. The data file used here contains 4,637 firms with less than 500 employees.<sup>168</sup> In this NSSBF file minority-owned firms were over-sampled, but sampling weights are provided to generate nationally representative estimates. Of the firms surveyed, 12 percent are owned by Blacks, 6 percent are owned by Hispanics, and individuals of other races (primarily Asians, Native Americans, and mixed race) own 7 percent.

Table 6.1 presents weighted sample means from these data for *all* firms in the sample that applied for credit. The estimates indicate that Black-owned firms are more than twice as likely to have a loan application rejected as White-owned firms (65.9 percent versus 26.9 percent).<sup>169</sup>

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<sup>165</sup> Additional discussion of Probit regression appears in Chapter V, Section C.1.

<sup>166</sup> Maddala and Trost (1994) describe two variants of such a model, one in which the interest rate is exogenous and another in which the interest rate is endogenously determined, but is capped so that some firms' loan applications are approved and others are rejected. If the interest rate is exogenous, they show that a reduced form model which controls for the loan amount, such as we report below, uniquely identifies supply-side differences in the treatment of Black-owned firms. If the interest rate is endogenous, a reduced form approach requires an assumption that the determinants of demand for White and Black-owned firms are identical, other things being equal. The main alternative empirical strategy is to estimate a structural supply and demand model, in which proper identification generally is not feasible. Any characteristic of the borrower that affects his/her expected rate of return on the investment will affect his/her ability to repay and should be taken into consideration by the lender as well. For instance, in their structural model of mortgage decisions, Maddala and Trost (1994) impose questionable exclusion restrictions, like omitting marital status from the loan supply equation.

<sup>167</sup> The Equal Credit Opportunity Act prohibits discrimination in access to credit by race and would apply to both Becker-type and statistical discrimination.

<sup>168</sup> The median size was 5.5 and mean size was 31.6 full-time equivalent employees; 440 firms out of 4,637 had 100 or more full-time equivalent employees.

<sup>169</sup> Cavalluzzo and Cavalluzzo (1998) examined these outcomes using the 1987 NSSBF and similarly found that denial rates (weighted) are considerably higher for minorities. White-owned firms had a denial rate for loans of 22 percent compared with 56 percent for Blacks, 36 percent for Hispanics, and 24 percent for other races, which are broadly similar to the differences reported here. These estimates for minority groups are estimated with less precision, however, because of the smaller number of minority-owned firms in the 1987 sample.

Other minority groups are denied at rates higher than Whites as well, but the magnitude of the Black-White differential is especially striking. Minority-owned firms, however, do have characteristics that are different from those of White-owned firms, and such differences may contribute to the gap in loan denial rates. For instance, minority-owned firms were younger, smaller (whether measured in terms of sales or employment), and more likely to be located in urban areas, to be a sole-proprietorship, and to have an owner with fewer years of experience than their White counterparts. Black-owned firms, in particular, were also generally less creditworthy than firms owned by other racial groups as measured by whether: (a) the owner had been bankrupt over the preceding 7 years, (b) the owner had been delinquent for more than 60 days on personal obligations over the prior three years, (c) the owner had legal judgments against him or her over the previous three years, and (d) the firm had been delinquent for more than 60 days on business obligations over the preceding three years. Black-owned firms also sought smaller amounts of credit, requesting loans about 60 percent smaller than those levels of funding requested by White-owned firms.

The NSSBF database does not allow us to identify the specific city or town where the firm is located; instead, data are reported for the four basic census regions and nine basic census divisions. Given that the Mountain division is relatively small we report evidence for the Western region (i.e. the Mountain division plus the Pacific division).<sup>170</sup> Table 6.2 presents evidence for the Western region where Denver is located. Results are only presented separately for Whites, Blacks, and Hispanics as there were relatively few firms from this region in the sample that were owned by other racial groups. The Western region sample includes 1095 firms, of which the owners of 415 firms reported that they had applied for a loan over the preceding three-year period. Overall denial rates are somewhat higher than the national rates reported in Table 6.1 - 35.1 percent for the Western region compared with 28.8 percent nationwide. The difference in the denial rates between Black-owned and White-owned firms is virtually the same as in the national data (39.0 percent nationally and 38.1 percent in the Western region). Black-owned firms in the Western region also appear to be less creditworthy than White-owned firms to a similar degree as seen nationally. In comparison with White-owned firms in the Western region, Black-owned firms tended to be smaller, younger, and less creditworthy, and they had applied for smaller loans that were likely to be for working capital.

### C. Qualitative Evidence

Before presenting the results of our multivariate analysis, we first report on what business owners themselves say are the main problems confronting them. This evidence, though not conclusive in determining whether discrimination exists, does highlight firms' perceptions regarding discrimination in obtaining credit. To the extent that Black-owned firms and other minorities report greater difficulty in obtaining credit than do White-owned firms, but report other types of problems no more frequently, it would suggest either that discrimination takes place or that perceptions of discrimination exist that are unwarranted. It therefore complements

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<sup>170</sup> The Western region includes Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

## Statistical Disparities in Capital Markets

the econometric analysis provided subsequently, which can distinguish between these two hypotheses.

Table 6.3 summarizes, for the U.S. as a whole, responses to specific questions about problems that the firms confronted over the 12-month period before the date of interview.<sup>171</sup> In the top panel respondents were asked to what extent credit market conditions had been a problem. Blacks and Hispanics were much more likely to say that it had been a “serious” problem (31 percent and 23 percent, respectively) than Whites (13 percent) or those from other racial groups (13 percent). The bottom panel of the table reports the results for eight other designated problem areas—(1) training costs; (2) worker’s compensation costs; (3) health insurance costs; (4) IRS regulation or penalties; (5) environmental regulations; (6) The American with Disabilities Act; (7) the Occupational Safety and Health Act; and (8) The Family and Medical Leave Act. Differences by race are much less pronounced in these eight areas than they were in relation to credit market conditions.<sup>172</sup> The finding that Black firms are largely indistinguishable from White firms in reporting a variety of problems, except for the case of credit, indicates that minority-owned firms perceive credit availability to be a problem for them. Results are broadly similar in Table 6.4 for the Western region—Black-owned firms were three times more likely and Hispanic firms almost twice as likely as White-owned firms to say that credit market conditions had been a serious problem in the preceding twelve-month period.

Table 6.5 reports the views of NSSBF respondents for the U.S. as a whole and Table 6.6 reports views for the Western region on the most important issue they believed that they were likely to have to confront over the 12-month period from the date of the interview. Credit availability again appears to be an issue for Black firms but much less so for firms owned by Whites, Hispanics and other racial groups. Whites were especially worried about health care costs.

Acute credit availability problems for minorities have been reported in other surveys in addition to NSSBF. In the 1992 Characteristics of Business Owners (CBO) Survey conducted by the Bureau of the Census, for example, firms were asked to report the impact of various kinds of costs upon their profitability<sup>173</sup>. Black and Hispanic-owned firms reported stronger negative impacts of credit market conditions and a lack of financial capital; there are no strong race or gender effects for the various other reasons given. The survey also reported on reasons why a discontinued business was unsuccessful. Black-owned and to a lesser degree Hispanic-owned firms were much more likely to report that the reason was due to lack of access to business or personal loans or credit than was true for other races.<sup>174</sup>

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<sup>171</sup>Blanchflower, Levine, and Zimmerman (1998) present similar evidence to that reported here from an additional data set, the 1992 Characteristics of Business Owners Survey, which was conducted by the Bureau of the Census.

<sup>172</sup>We also estimated a series of ordered Logit equations to control for differences across firms in their creditworthiness, location, industry size, and the like. It is apparent from these regressions that Blacks were more likely to report that credit market conditions were especially serious. Only in the case of the Family and Medical Leave Act were Blacks significantly more likely to report this problem.

<sup>173</sup> <http://www.census.gov/prod/3/97pubs/cbo-9201.pdf> , Table 1, p.21.

<sup>174</sup>When asked if lack of financial capital was a serious problem affecting business profitability 29 percent of firms owned by White males in the CBO survey answered in the affirmative compared with 46 percent owned by Blacks and 38 percent by Hispanics. For firms that were discontinued 7 percent of firms owned by White males

A recent study published by the U.S. Chamber of Commerce (2005) confirms the findings in Blanchflower, Levine and Zimmerman (2003). The survey was conducted in March and April 2005 and detailed the financing problems experienced by small business owners, 95 percent of whom had less than 100 employees. A detailed in Table 6.7, over 1000 business owners were interviewed and reported that minority businesses rely heavily on credit cards to fund their businesses, often do not apply for credit, even though they need it, for fear of being denied, and were especially likely to need working capital. In particular they report that availability of credit is their top problem, exactly as reported by Blanchflower, Levine and Zimmerman. The biggest difference in responses between minorities and White men and women was availability of credit: 19 percent of White males report credit as their top problem compared with 54 percent for minority males – a 35 percentage point difference. There was a 15 percentage point difference for women. In no other category is there more than a 10 percentage point difference for men or women.

In summary, Black-owned firms in particular and to a lesser extent Hispanics report that they had problems with the availability of credit in the past and expected that such difficulties would continue into the future. Whether or not these perceptions reflect actual discrimination can be distinguished in the econometric analysis to follow.

### D. Differences in Loan Denial Rates by Race/Ethnicity

Evidence presented to this point indicates that minority-owned firms are more likely to be denied loans and report that their lack of access to credit significantly impairs their business. Can these differences be explained by such things as differences in size, creditworthiness, location, or other factors as some have suggested in the literature on discrimination in mortgage lending (Horne, 1994; Bauer and Cromwell, 1994; and Yezer, Phillips, and Trost, 1994). To address this question we now turn to an econometric examination of whether the loan requests made by minority-owned firms are more likely to be denied, holding constant differences among firms.

In Table 6.8 and Table 6.9, we report the results from a series of loan denial Probit regressions of the form specified in Equation (1) using data from the 1993 NSSBF for the U.S. and the Western region. As indicated earlier, the 1993 and 1998 datasets have the particular advantage that they include information that can be used to proxy an applicant's creditworthiness. We report estimates from these models that can be interpreted as changes or differences in loan denial probabilities depending on the type of variables considered. For indicator variables, such as race and gender indicators, estimates show differences in loan denial probabilities between the indicated group and the base group.<sup>175</sup> In Column (1) of Table 6.8 (in which the regression model

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reported it was due to lack of access to business capital compared to 16 percent for firms owned by Blacks and 9 percent for Hispanics. A further 3 percent of White males said it was due to lack of personal capital compared to a further 8 percent for firms owned by Blacks and 6 percent for Hispanics. See Blanchflower, Levine and Zimmerman (1998, tables 3a and 3b).

<sup>175</sup>For “continuous” variables, such as profits and sales, estimates can be thought of as changes in loan denial probability when the continuous variable changes by one unit. For example, in Column (2) of Table 6.8, the estimated coefficient of -0.003 on owner's years of experience indicates that one additional year of owner's experience is related to -0.3 percentage point reduction in loan denial rate.

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contains only race and gender indicators), the estimated coefficient of 0.426 on the Black indicator can be interpreted as indicating that the denial rate for Black-owned businesses is 42.6 percentage points higher than that for White-owned firms.<sup>176</sup>

The remainder of Table 6.8 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race.<sup>177</sup> In Column (2) a number of controls are included that distinguish the creditworthiness of the firm and the owner.<sup>178</sup> Many are statistically significant on a two-tailed test at conventional levels of significance with the expected signs. For instance, having been bankrupt or had legal judgments against the firm or owner raises the probability of denial; stronger sales lower this probability. Even after controlling for these differences in creditworthiness, however, Black-owned firms remain 28 percentage points more likely than White-owned firms to have their loan request denied.

The models reported in Columns (3) through (5) of Table 6.8 control for an array of additional characteristics of firms. Column (3) adds 30 additional characteristics of the firm and the loan application, including such factors as level of employment, change in employment, the size of the loan request, and the use of the loan. Column (4) includes variables to control for differences across regions of the country and the firm's industry. Column (5) adds variables indicating the month and year in which the loan was requested and the type of financial institution to which the firm applied.<sup>179</sup> In total these three columns add 164 variables to the more parsimonious specification reported in Column (2).<sup>180</sup> Nevertheless, the estimated disadvantage experienced by

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<sup>176</sup>This estimate largely replicates the raw difference in denial rates between Black- and White-owned businesses reported in Table 6.1. The raw differential observed there ( $0.659 - 0.269 = 0.39$ ) differs slightly from the 0.426 differential reported here because this specification also controls for whether the business is owned by a woman and because the regressions are unweighted whereas the descriptive statistics are weighted using the sample weights. When a full set of explanatory control variables are included the unweighted estimates are insignificantly different from the weighted estimates, hence in Table 6.7 and subsequent tables we report only unweighted estimates.

<sup>177</sup>In preliminary analyses, we have also estimated these models separately, focusing specifically on the differences in coefficient estimates between Whites and Blacks. The F-Test we conducted to determine whether parameter estimates were the same for Blacks and Whites rejected this null hypothesis. Then we used the estimates obtained by estimating the model separately by race and conducted an Oaxaca (1973) decomposition. The results from this analysis were similar to those obtained by restricting the coefficients to be the same between Blacks and Whites and using the coefficient on the Black indicator variable to measure the gap between groups. We have chosen to report all the results in this simpler format for ease of exposition and interpretation.

<sup>178</sup>In the current specification, all variables have been entered linearly. We have also experimented with some combinations of variables, like the ratio of debt to equity as well as various non-linearities (*e.g.* sales, profits, employment, etc.). The results were unaffected by these alternative functional forms, so we chose to report results from the simpler specification.

<sup>179</sup>Approximately four out of five (80.5%) of the firms who required a loan applied to a commercial bank. Overall seventeen different types of financial institution were used, although only the following accounted for more than 1% of the total (weighted)—Credit Unions (2.0%); Savings Banks (2.5%); Savings & Loans (2.3%); Finance Companies (4.9%); Lease Companies (2.1%), and other business firms (1.7%).

<sup>180</sup>One piece of information to which we do not have access because of confidentiality concerns is each firm's credit rating. However, a working paper by Cavalluzzo, Cavalluzzo, and Wolken (1999) has been able to incorporate Dun and Bradstreet credit ratings for each firm because their connection to the Federal Reserve Board enables them to access the confidential firm identifiers. They have added this variable in a model comparable to that reported here and found the results insensitive to its inclusion.

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Black-owned firms in obtaining credit falls by a relatively small amount. The estimate from each of the three additional columns indicates that Black-owned firms are 23 percentage points more likely than White-owned firms to have their loan application denied even after controlling for the multitude of factors we have taken into consideration.<sup>181</sup> In Column (2) of Table 6.9, we see results for the Western region similar to those reported in Table 6.8 for the nation as a whole. Table 6.9 shows that the results of our loan denial model in the Western region, which includes Denver, are not significantly different from the nationwide results reported in Table 6.8. The indicator variable for the Western region is insignificantly different from zero, as are the interaction terms between race and the Western region.

Although the results provided so far indicate that financial institutions treat Black- and White-owned small businesses differently in lending, other considerations may limit our ability to interpret this finding as discrimination. Of perhaps greatest concern is the possibility that we may not have adequately controlled for differences in the creditworthiness of firms. If Black-owned firms are less creditworthy and we have failed to sufficiently capture those differences then we would be inadvertently attributing the racial difference in loan denial rates to discrimination.<sup>182</sup>

Our first approach in addressing this issue was to identify the types of information that financial institutions collect in order to evaluate a loan application and compare that with the information available to us in the NSSBF. First, we went to some local banks and obtained small business loan applications. Then, to supplement this small sample, we searched the Internet and examined web sites that provide general business advice to small firms, including a description of the loan application process and the information typically requested of applicants.<sup>183</sup>

We found that detailed information is requested of both the firm and its owner. Regarding the firm, banks typically request information on: (a) type of business, (b) years in business, (c) number of full-time employees, (d) annual sales, (e) organization type (corporation or proprietorship), (f) owner's share, (g) assets and liabilities, (h) whether the business is a party to any lawsuit, and (i) whether any back taxes are owed. Regarding the owner's personal finances, banks typically ask for: (a) assets and liabilities, (b) sources and levels of income, and (c) whether the owner has any contingent liabilities. Some applications ask explicitly if the firm qualifies as a minority-owned enterprise for the purposes of certain government loan guarantee programs. The race of the applicant, however, would be readily identifiable even in the absence of such a question since most of these loans would be originated through face-to-face contact with a representative of the financial institution.

These criteria seem to match reasonably closely the information available to us in the NSSBF. The particular strength of the NSSBF is the detail available on the firm, which covers much of

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<sup>181</sup>The results indicate that Asians/Pacific Islanders also had significantly higher denial rates than Whites.

<sup>182</sup>On the other hand, however, if financial institutions discriminate against Black-owned firms, then the greater likelihood of denial for Blacks in earlier years is likely to hurt the performance of these firms and appear to make them look less creditworthy. Therefore, controlling for creditworthiness will likely understate the presence of discrimination.

<sup>183</sup>An example of a typical application form is presented as Appendix B in Blanchflower, Levine, and Zimmerman (1998).

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the information typically requested on loan application forms. The main shortcoming that we have identified in these data is the limited detail available on the finances of the owner of the firm. Although our creditworthiness measures enable us to identify those owners who have had serious financial problems (like being delinquent on personal obligations) we have no direct information regarding the owner's assets, liabilities, and income. These factors would be necessary to identify whether the business owner has sufficient personal resources to draw upon should the business encounter difficulties and to determine the personal collateral available should the firm default on its obligation. We do have measures of the owner's human capital in the form of education and experience, which likely capture at least some of the differential in available personal wealth across firm owners. Nevertheless, our potentially incomplete characterization of the business owner's personal financial condition may introduce a bias into our analysis if Black business owners have fewer resources than White business owners.

To assess the potential impact of this problem on our results, we separately examined groups of firms who differ in the degree to which personal finances should influence the loan decision and compare the estimated disadvantage experienced by Black-owned firms in different groups. First, we examine proprietorships and partnerships separately from corporations since owners of incorporated businesses are at least somewhat shielded from incurring the costs of a failed business. Second, we divide firms according to their size.<sup>184</sup> Both larger small businesses and those that have been in existence for sometime are more likely to rely on the business's funds, rather than the owner's, to repay its obligations. Third, we consider firms that have applied for loans to obtain working capital separately from those firms that seek funds for other purposes (mainly to purchase vehicles, machinery and equipment, and buildings or land). Loans made for one of these other purposes at least partially provide their own collateral because the financial institution could sell them, albeit at a potentially somewhat reduced rate, should the small business default.<sup>185</sup> In order to determine whether the findings for the Western region were different from those for the nation, in the second column of Table 6.10 we also report the coefficient and t-statistics on an interaction term between the Western region and Black ownership. In no case was the estimated coefficient on this interaction significant, implying that the national results also apply to the Western region.

Results from these analyses provide no indication that omitting the owner's personal wealth substantially biases the results presented above in Tables 6.8 or 6.9. Estimates presented in Rows 1 through 8 of Table 6.10 indicate that Black-owned small businesses are significantly more likely to have their loan applications rejected regardless of the category of firm considered. In particular, when samples are restricted to corporations, larger firms, and firms seeking credit for

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<sup>184</sup>As reported earlier, the mean and median size of firms is 5.5 and 31.6 full-time equivalent workers, respectively. Fourteen percent of firms have one or fewer employees and 27 percent have two or fewer employees.

<sup>185</sup>As indicated earlier, greater personal wealth may improve a small business's chances of obtaining credit because it provides collateral should the loan go bad and because wealthy owners can use their own resources to weather bad times, improving the likelihood of repayment. Our separate analysis of corporations and proprietorships and of large and small firms does not account for this second reason because corporations and large businesses may still need to draw on the owner's personal wealth to help it survive short-term shocks. Businesses that have been in existence for several years, however, are less likely to experience these shocks, making them less likely to require infusions from the owner's personal wealth. A loan used to purchase equipment that can be sold if the firm defaults similarly insulates the bank from the need to seek repayment directly from the owner.

uses other than working capital, Black-owned firms are 21, 23, and 17 percentage points more likely, respectively, to have their loan application rejected even though personal resources should be less important in these categories. Moreover, in each group where there are two types of firms (large and small, etc.), the estimates for the two types of firms are not significantly different from each other.

Another issue that needs to be considered in interpreting the results presented so far is whether or not the racial differences in loan denial rates among firms with similar characteristics can be attributable to differences in the geographic location of Black- and White-owned firms. If, for example, Black-owned firms are more likely to locate in the central city, and a central city location is negatively correlated with profitability and the ability to repay debt, then financial institutions may be acting optimally in rejecting the loan applications of Black-owned firms at a higher rate. As indicated earlier, this type of behavior is labeled “statistical discrimination.” In the subsequent text and tables, we present a limited analysis to address whether or not this type of behavior takes place.<sup>186</sup>

To identify whether lenders’ behavior is consistent with this hypothesis we distinguish those firms that self-classified their sales market as being local rather than regional, national, or international. A central city location should have a greater impact on future profit expectations for those firms that operate on a local level. If minority-owned firms are more likely to locate in the central city, racial differences in loan approval rates should be greater in the firms that sell in the local marketplace. The results of this test, reported in Rows 9 and 10 of Table 6.10, reject the hypothesis that differences in loan denial rates are attributable to different propensities to locate in the center of a city. Estimates indicate that Black-owned firms that sell to the local market are 17 percentage points more likely to have their loan applications denied compared to a 29 percent denial rate for firms selling primarily to regional, national, or international markets.

We also estimate models that address a potential weakness in the specific functional form with which we control for differences in credit history across firms. As shown in Tables 6.1 and 6.2, Black-owned firms are considerably more likely to have had troubles in the past in the form of judgments against them, late payments by the firm or its owner, or past bankruptcies. The model specifications reported in Tables 6.8 and 6.9 implicitly assume that these past problems are additive in their effect on loan denials and one might suspect the marginal impact would rise as past problems rise. Therefore, in the final three rows of Table 6.10, we separate firms by the number of types of past problems experienced. In Rows 11 through 13, we restrict the sample to those firms that have never had any past credit problems, those firms that reported one problem only, and those firms that reported more than one of these problems, respectively. The results suggest that even Black-owned firms with clean credit histories are at a significant disadvantage in getting their loans approved, holding constant their other characteristics.

Finally, we consider whether Black-owned firms are treated differently from White-owned firms when requesting credit from other sources. If minority-owned firms really are less creditworthy,

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<sup>186</sup>A strong test to distinguish between statistical discrimination and “Becker-Type” discrimination would require a tremendous amount of detail about the specific location of the firm, characteristics of its surrounding area, characteristics of neighboring firms, and the like, all of which are unavailable to us. As indicated earlier, both forms of discrimination are illegal and this chapter applies a definition that incorporates both.

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then other types of creditors also may be reluctant to provide them with credit. On the other hand, if they are able to obtain other kinds of credit at roughly the same rate regardless of the owner's race, then the disadvantage that Black-owned firms face when they apply for loans from financial institutions is more likely attributable to discrimination.

The source of credit we examine is credit cards. Such an analysis provides a unique advantage because credit card applications are more likely to be filled out and mailed in, so it is quite likely that the race of the applicant is unknown to the financial institution.<sup>187</sup> The 1993 NSSBF asked respondents whether they used either a business or personal credit card for business purposes. Although our analysis of use of credit cards does not condition on application, a finding that Black- and White-owned small businesses are equally likely to use credit cards may still provide evidence supporting discrimination in small-business lending. In fact, if financial institutions discriminate against Blacks in providing small business loans, we may even expect to see Blacks use credit cards more often than Whites since they have fewer alternatives. Even though many institutions may offer both types of credit, they may only be aware of the race of the applicant in a small business loan.<sup>188</sup>

In Tables 6.11 and 6.12 we examine the probability that a firm uses either a business credit card (Row 1) or a personal credit card (Row 2) to finance business expenses holding constant other differences across firms.<sup>189</sup> In neither case could we find evidence that Black-owned firms or other minority-owned firms were significantly less likely to have access to such cards overall or in the Western region.<sup>190</sup>

We also had information available on the maximum amount that could be billed to these accounts and could find no significant differences by race in a regression that modeled the amount that could be charged. Nor were any racial differences observed when we modeled the typical balance remaining on these cards at the end of a typical month.

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<sup>187</sup>In fact, it is our understanding that it is illegal for creditors to ask applicants about their race on a credit application. Lenders to small businesses appear to be exempt from this restriction, from what we can determine, so long as they are asking whether the entity is a certified minority-owned small business for the purpose of determining eligibility for Small Business Administration loan guarantees. In either case, it is illegal to use race as a factor in determining whether or not to grant a loan.

<sup>188</sup> It appears that race may also rarely be known to those institutions that issue credit ratings. As we mentioned above, Cavalluzzo, Cavalluzzo, and Wolken (1999) show that Dun & Bradstreet Credit Ratings are not helpful in explaining racial disparities in loan denials. Although we are not privy to Dun & Bradstreet's methodology for establishing its credit ratings, we do know from long experience that the good indicators of ownership by race are lacking in Dun & Bradstreet's master business identifier file. Indeed, this is the reason why NERA's availability estimation methodology requires us to create a master directory of disadvantaged, minority, and women-owned businesses for merging with Dun & Bradstreet's data.

<sup>189</sup>On average, 29 percent of all firms use business credit cards and 41 percent use personal credit cards for business use; these levels vary only modestly by race and ethnicity. Blanchflower, Evans and Oswald (1998a) use the same data to examine the role of credit cards and find that the presence of business credit cards enhances employment growth. Blanchflower, Evans and Oswald (1998b) used data from various Surveys of Consumer Finances to show that credit cards reduced households' transactions balances.

<sup>190</sup> Excepting Asians in the U.S. sample.

## E. Differences in Interest Rates Charged on Approved Loans

Although most of our analysis has addressed whether minority and White-owned firms are treated equally in terms of their probability of loan denial, another way that differential treatment may emerge is through the interest rate charged for approved loans. Discrimination may be apparent if banks approve loans to equally creditworthy minority- and White-owned firms, but charge the minority-owned firms a higher rate of interest. Therefore, we estimated model specifications analogous to those reported previously for loan denials, but now the dependent variable represents the interest rate charged for firms whose loans were approved and the set of explanatory variables includes characteristics of the loan. More formally, the model we estimate takes the form:

$$(2) \quad I_i = \beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i + \beta_4 LC_i + \varepsilon_i,$$

where  $I$  represents the interest rate charged on the loan,  $LC$  represents characteristics of the loan (see the notes to Table 6.8 for a full list of the variables included in this set), and all other notation is the same as in equation (1).

An important consideration in this analysis is whether or not the interest rate may be treated as exogenous, as our reduced form model assumes. In the context of small business loans, in which it is possible that the loan terms may be negotiated in the determination process, this assumption may not be valid. As such, a model that simultaneously estimates the interest rate and the loan decision might be appropriate, except that the interest rate which would be charged to firms whose loans were denied is not available in our data. Alternatively, one could estimate an interest rate model alone for those firms whose loan was approved, adjusting for the potential bias brought about by sample selection. To properly identify such a model, however, a variable is required that is linked to the loan denial decision, but unrelated to the level of interest charged on approved loans; no such variable exists in the data.

Nevertheless, one would expect these considerations to impose a downward bias on the estimated differential in interest rates charged on loans to Black-owned firms. Those firms whose loans were rejected would have been charged higher interest rates than those approved. Since Black-owned businesses were considerably more likely to be rejected holding constant differences in creditworthiness, one would expect any differential in interest rate to be even greater if those firms were included in the sample. We overlook this implication in the results reported below, but its impact should be kept in mind.

The results obtained from estimating equation (2) are reported in Row 1 of Table 6.13, which includes the complete set of control variables comparable to those in Column 5 of Table 6.8, except that these models both include a full set of loan characteristics. Estimates indicate that Black-owned firms pay rates of interest that are almost 100 basis points higher than White-owned firms after controlling for differences in creditworthiness. Row 2 shows that even

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Black-owned firms with good credit histories are charged interest rates of almost a percentage point higher.<sup>191</sup>

The remainder of the table presents similar specification checks to those reported in Table 6.10. Recall that most of these models identify firms for which the firm's own history is likely to be a more important contributor to its creditworthiness. The specifications by sales market are designed to distinguish the impact of central city location. Unfortunately, sample sizes are smaller in these specifications and reduce the power of the analysis. Nevertheless, we still find that regardless of organization type and firm age, Black-owned firms face statistically significantly higher interest rates. Overall, the evidence presented indicates that Blacks do face some disadvantage in the market for small business credit that does not appear to be attributable to differences geography or even to differences in creditworthiness.

### F. Loan Approval Rates and Access to Credit

The results presented so far may be biased toward finding too small a disparity between White- and Black-owned firms because those minority-owned firms that actually apply for credit may represent a selected sample of the most creditworthy. More marginal minority-owned firms whose loans may have been accepted had they been owned by Whites may not even be among the pool of loan applicants. First, these firms may have gone out of business or may not have had the opportunity to commence operations because of their inability to obtain capital. Second, some existing firms may have chosen not to apply for credit because they were afraid their application would be rejected due to prejudice.

Although we have no direct evidence regarding the first proposition, data from the 1993 NSSBF provide some evidence for the second: Black- and Hispanic-owned firms are much more likely to report that they did not apply for a loan, even though they needed credit, because they thought they would be rejected. Table 6.14 reports estimates from Probit models in which the dependent variable is an indicator variable representing failure to apply for a loan fearing denial for all firms. The first row presents racial differences without controlling for any other characteristics of firms, and the results indicate that Black- and Hispanic-owned firms are 40 and 23 percentage points more likely than White-owned firms to withhold an application fearing denial.<sup>192</sup>

Of course, some of this difference may be attributable to differences in creditworthiness across firms since firms that are bad credit risks should be afraid that their loan would be denied. To adjust for this, the second row of Table 6.14 reports comparable models that control for differences in creditworthiness and other characteristics of firms. The results from this specification show that the higher degree of fear of rejection among Black- and Hispanic-owned firms can partially be explained by these differences. Nevertheless, a gap of 26 and 16

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<sup>191</sup>We do not report estimates from sub-samples of firms that have had past credit problems because their higher likelihood of being denied credit significantly restricts the size of the sample, reducing our ability to provide a powerful test of the interest rates they are charged if approved.

<sup>192</sup>The actual percentages for each group are: 22.5 percent for White-owned businesses, 41.7 percent for Hispanic-owned businesses, and 60.8 percent for Black-owned businesses.

percentage points still exists for Black- and Hispanic-owned firms relative to White-owned firms with similar characteristics. In fact, when asked directly why they were afraid to apply for loans, minority-owned firms were far more likely to report prejudice as the reason (18 percent for Black-owned firms, five percent for Hispanic-owned firms, and two percent for White-owned firms).<sup>193</sup> Results obtained in section (b) of Table 6.14 for the Western region are similar to those found for the nation as a whole. As section (c) of Table 6.14 shows, Black-owned firms in construction also appear to be fearful of applying because of the possibility of their application being turned down.<sup>194</sup>

If these minority-owned firms had applied for credit and were rejected because of discrimination, estimates of racial disparities based only upon loan applicants (as in Tables 6.8 and 6.9) would be understated. The perception of prejudice among these firms, however, does not necessarily imply that selection bias is present. Those firms that failed to apply because they feared rejection may have had similar loan denial rates as other minority-owned firms with comparable levels of creditworthiness that did apply. If those firms chose to apply for a loan, differences by race in the combined denial rate of the actual and potential applicants would be the same as what we have estimated for the observed sample of applicants.

More formally, suppose that loan denial rates for equally creditworthy White- and minority-owned firms that applied for credit are  $\theta^W$  and  $\theta^m$ , respectively; the measure of discrimination employed in the previous analysis is  $\theta^m - \theta^W$ . Now suppose that firms that are equally creditworthy, but chose not to apply for a loan because they feared rejection, would have been denied at the rates  $\theta^W$  and  $\psi^m$  for White- and minority-owned firms, respectively. Among the White-owned firms, the denial rate is identical regardless of whether the firm chose to apply or not, conditional upon creditworthiness. Among minority-owned firms, however, those who were afraid to apply may have been denied at a higher rate (perhaps because of their greater propensity to locate in the central city or other factors that are related to their race, but unrelated to creditworthiness) compared with other minority-owned firms. Then the correct representation of the disadvantage faced by minority-owned firms is  $[\eta\theta^m + (1-\eta)\psi^m] - \theta^W$ , where  $\eta$  represents the share of minority-owned firms desiring credit that submitted an application. Our earlier findings are biased if  $\theta^m$  is not equal to  $\psi^m$ .

One approach that is frequently employed to address such a problem is to estimate a “Heckman-correction” that would formally model the application process in conjunction with the loan outcome for those who applied. The difficulty with this methodology in the present context is that it is only correctly implemented when some variable is present that is correlated with a firm’s decision to apply for a loan, but is independent of the financial institution’s decision to

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<sup>193</sup>Other reasons given, including, 'too little collateral', 'poor credit history', and 'poor balance sheet', are comparable across groups. Firms could report more than one reason.

<sup>194</sup>It was not possible to report separate construction results in earlier tables because of small sample sizes (there are 525 firms in construction: 234 applied for credit, of which 161 had their loan requests approved).

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approve or deny the request. Unfortunately, the NSSBF data do not appear to contain any variables that would satisfy these conditions, so we are unable to implement this methodology.<sup>195</sup>

As an alternative that answers a different, but related, question we consider the ability of firms to get credit among those who desired it, regardless of whether or not they applied. This amounts to analyzing access to credit rather than loan approval and includes in the denominator those firms that needed credit but did not apply because they feared rejection. If differences by race in this rate among all firms who needed credit are greater than differences by race in the rate of denial among loan applicants, then this would indicate that Black- and Hispanic-owned firms have even less access to credit than an analysis of loan applicants would indicate.

To test this proposition, we estimate a regression model comparable to the one reported in Table 6.10 for the sample of firms that applied for a loan, except that this analysis considers all firms seeking credit and treats those who did not apply for fear of rejection as denials. The sample excludes firms that did not need additional credit in the preceding three years. The results, reported in Table 6.15, are consistent with the previous analysis; we find that selection is not much of an issue for Black-owned firms nationally, in the Western region, or in construction sub-samples. Regardless of whether we consider denial rates among applicants or denial rates among firms that desired additional credit, Black-owned firms are 20-30 percentage points less likely to obtain credit once control variables are included and even higher than that when they are not. For Hispanic-owned firms, however, selection bias is evident. Among the pool of loan applicants, Hispanic-owned firms are not statistically significantly more likely to be denied than other firms with the same characteristics (see *e.g.* Table 6.8, column 5). Among the pool of firms seeking additional credit, however, Hispanic-owned firms are 15 percentage points more likely to be denied access to credit, and this difference is statistically significant.

### G. Analysis of Credit Market Discrimination in the U.S. in 1998

We now turn to an examination of the extent to which discrimination in the credit market has changed since 1993 using data from the 1998 SSBF conducted by the Board of Governors of the Federal Reserve System—the best and most recent national data available.<sup>196</sup> Our main goal in

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<sup>195</sup>The only variable that we felt potentially could meet these conditions in the NSSBF data is the distance between a firm and the nearest financial institution. If greater distance reduced a firm's information regarding the availability of funds, it might be related to the decision to apply for a loan. On the other hand, the creditworthiness of the firm should be independent of its location and should be unlikely to enter into the approval process. Unfortunately, we did not find a direct relationship between distance to the nearest financial institution and the probability of applying for a loan. This may be due to the fact that few firms are located more than a very short distance from the nearest financial institution.

<sup>196</sup>The target population of the survey was for-profit businesses with fewer than 500 employees that were either a single establishment or the headquarters of a multiple establishment company, and were not agricultural firms, financial institutions, or government entities. These firms also had to be in business during December 1998. Data were collected for fiscal year-end 1998. Like its 1993 counterpart, the purpose of this survey was to gather information about small business financial behavior and the use of financial services and financial service providers by these firms. The objectives of the survey were to collect information that can inform researchers and policy makers on the availability of credit to small businesses; the location of the sources of financial services; the types of financial services used, including checking accounts, savings accounts, various types of credit, credit cards, trade credit, and equity injections; as well as the firm's recent credit acquisition experiences. The survey also investigated the level of debt held by these firms and their accessibility to credit. Additionally, the survey

this section is to update the various estimates obtained in the sections above using the 1993 NSSBF. One significant complication is that a number of the questions have been changed. However, the result still comes out loud and clear – Black-owned firms face discrimination in the credit market. In addition, there is evidence of discrimination in the credit market against other minority-owned firms as well. In this section we present four main pieces of evidence, all of which are consistent with our findings from above.

### 1. Qualitative Evidence

As shown in Table 6.16, minority-owned firms report that the biggest problem they face is ‘financing and interest rates’.<sup>197</sup> There are much smaller differences between minority and female-owned firms and those owned by White males in any of the other rows of the Table.

In the 1998 SSBF survey respondents who were denied loans were asked why they believed the loans were turned down. Options included the following:

- a) Prejudice on a racial/ethnic basis.
- b) Prejudice against women.
- c) Prejudice against the business location.
- d) Prejudice against the business type.
- e) Prejudice or discrimination (not-specified or other).

Similarly, firms who did not apply for fear of denial were asked the same question. Overall 2.3 percent of White males responded in the affirmative to any of these questions compared with 20.2 percent for minorities and women. In the case of the 1993 NSSBF survey 5.4 percent of White males responded in the affirmative compared with 19.8 percent for minorities and women). A substantial proportion of minorities and women in both surveys report that their loan applications were turned down because of *prejudice* based on race or gender.

### 2. Creditworthiness

In 1998, in comparison with firms owned by White males, minority and female-owned firms (MWBES) were less creditworthy, more likely to have their loan applications turned down, be more fearful of applying for a loan for fear of being denied, and consistently smaller and

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collected information on firm and owner demographics, as well as the firm’s recent income statement and balance sheet.

<sup>197</sup>In the 1993 survey respondents were asked to report problems in the preceding 12 months (Tables 6.3 and 6.4) and over the next 12 months (Tables 6.5 and 6.6). Interestingly, even though credit availability was by far the most important category for Blacks (21% in Table 6.5) and interest rates was very unimportant (1%), NSSBF no longer reports separate categories.

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younger. Their owners had lower amounts of both home and non-home equity. Minority-owned firms in general, and Black-owned firms in particular, were much less likely to be classified as having a “low risk” credit rating by Dun and Bradstreet.<sup>198</sup>

In the 1993 survey respondents were asked “during the last three years has the firm applied for credit or asked for the renewal of terms on an existing loan?” In 1998 a narrower question limited to new loans was asked – “did the firm apply for new loans in the last three years?” In 1993, 43 percent answered the question in the affirmative compared with 27 percent in 1998. Despite the fact that in 1993 the question referred to new loans and renewals while in 1998 it only referred to new loans, the pattern of denials by race is very similar across the years. As can be seen below, minority-owned firms were especially likely to have their loan applications denied.

Percentage of Loan Applications Denied		
	1993	1998
White males	26.2%	24.4%
Blacks	65.9%	62.3%
Asians, Native Americans, etc.	39.9%	47.0%
Hispanics	35.9%	54.5%
White females	30.1%	24.6%
Overall	28.8%	28.6%

Similarly, the proportion of firms that reported that they did not apply for fear of being denied shows a good deal of similarity by race across the two years. More than half of Black owners did not apply for a loan for fear of being denied compared with one out of five White males.

Percentage Did Not Apply for Fear of Denial		
	1993	1998
White males	22.5%	20.2%
Blacks	60.8%	53.9%
Asians, Native Americans, etc.	27.6%	23.1%
Hispanics	41.7%	30.1%
White females	22.7%	25.5%
Overall	24.7%	23.3%

<sup>198</sup> Information on home and non-home equity or on the Dun & Bradstreet credit rating was not available to us in the 1993 survey.

### H. Further Credit Market Analysis, 1998

In Tables 6.8 and 6.9, the determinants of loan denial rates were estimated using data from the 1993 NSSBF. It was found that Blacks were approximately twice as likely to have their loans denied than White males, even after controlling for a host of variables included primarily to control for the possibility that minority-owned firms are smaller and less creditworthy than those owned by White men. A similar exercise is performed in Tables 6.17 and 6.18 using data from the 1998 SSBF. Column 1 in Table 6.17 shows that Blacks have 38.9 (42.6) percentage point higher probability of denial than Whites without taking account of creditworthiness of the firm.<sup>199</sup> The addition of a large number of controls reduces the size of the coefficient on Blacks to .31 (.23) in column 6 as the full set of controls are added. Table 6.18 focusing on the Western Region yields similar results. The main difference between 1993 and 1998 is that now we find evidence that the probability of denial is significantly higher for both Hispanics and Asians. In Table 6.17 column 6, Hispanics have a 21.1 percentage point higher probability of being denied while Asians had a 15.9 percentage point higher probability than White men. As in 1993, however, we found no significant effects for women. In Table 6.8, by contrast, denial probabilities for Hispanics and Asians were *not* significantly different from those of White men. If anything, discrimination in the small business credit market for appears to have expanded during the late 1990s.

To some extent the quality of the experiment is better using the 1998 data than it was using the 1993 data. The reason for this is because of the availability of an improved set of controls for the creditworthiness of the firm and/or its owner. In 1998 we have available to us three new variables to indicate the financial viability of the firm that were not available in 1993:

- a) The value of the equity, if any, in the owner's home.
- b) The owner's net worth excluding home equity.
- c) The Dun and Bradstreet 1999 credit rating in five categories (low, moderate, average, significant and high) indicating the likelihood of a firm defaulting on its loans.<sup>200</sup>

Despite the fact that these variables do help to predict loan denials,<sup>201</sup> the estimated race differences including these variables are unchanged from those reported above.<sup>202</sup> This suggests

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<sup>199</sup>Numbers in parentheses are the (roughly) comparable numbers from the 1993 survey reported above in Table 6.8.

<sup>200</sup>The D&B Commercial Credit Score Report predicts the likelihood of a company paying in a delinquent manner (90+ days past terms) during the next 12 months based on the information in D&B's file. The score is intended to help firms decide quickly whether to accept or reject accounts, adjust terms or credit limits, or conduct a more extensive review based on the report D&B provides. Firms can also determine the company's relative ranking among other businesses in the D&B database. For further details see <http://www.dunandbradstreet.com/>.

<sup>201</sup>The coefficients and t-statistics on the credit score variables when they were included alone was as follows: moderate risk = .215 (2.59), average risk = .297 (3.65); significant risk = .357 (4.19); high risk = .420 (4.46), n=962 pseudo  $r^2$  = .0301. Excluded category 'low risk'.

<sup>202</sup>This confirms the findings of Cavalluzzo, Cavalluzzo and Walken (1999) who performed a similar exercise with the 1993 data.

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that the large estimated differences in the denial probabilities that were estimated in 1993 were not biased significantly upwards by the fact that these variables were unavailable.

The question we used to examine the 1998 data was somewhat narrower than the question used in the 1993 survey because it was changed by the survey designers. The 1998 question asked about new loans over the preceding three years, whereas the 1993 question covered all loans including renewals. Responses were as follows:

Did not apply	2599	73%
Always approved	713	20%
Always denied	166	5%
Sometimes approved/sometimes denied	83	2%
Total	3561	

The dependent variable used in earlier equations – *denied* – was set to one if the loan application was always denied, zero if the application was always or sometimes denied. An alternative dependent variable – *denylast* – would be to set the dependent variable to one if always denied and zero if always approved with the sometimes approved/sometimes denied set to missing. Column 1 of Table 6.19 replicates column 1 of Table 6.17 using *denylast* as the dependent variable with the smaller sub-sample. Blacks, Asians and Hispanics are all confirmed to face higher denial rates than White males using this specification, by 45 percentage points for Blacks, 16 percentage points for Asians and 40 percentage points for Hispanics, which are substantial increases in the scale of the results compared to the results for 1993. There is an even more interesting finding in column 1 using *denylast*: we now find evidence that White females have significantly higher loan denials than White males. This is the first time we have seen strong evidence of this phenomenon for White women – White women appear to have denial probabilities 10 percentage points higher than White males.

Results consistent with discrimination are confirmed for Blacks, Asians, Hispanics, and White women in column 2 of Table 6.19 when a host of characteristics, region and industry indicators are included.<sup>203</sup>

Tables 6.20 through 6.22 provide confirmation from the 1998 survey of a number of other results from the 1993 survey reported earlier.

First, Table 6.20, which is comparable to Table 6.13 finds that, conditional on obtaining a loan, Blacks are charged 100 basis points higher interest on average nationally. This result is even

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<sup>203</sup> For the specification in column 2 we increase the sample size by adding back into the sample a number of cases where the ownership of the firm was 50/50 with one of the partners being a woman but the identity of the other partner and the race of the woman was unknown. We excluded these individuals from all other analyses above. When they are added back and separately identified the significance of the White female indicator improves in the *denylast* equation. Neither the White female indicator nor the woman 50/50 indicator are ever significant in the specification that we use with the dependent variable *deny*; they are significant using *denylast*.

more pronounced in the Western Region. These results are not significantly different in construction than in other industries.

Second, Table 6.21, which is comparable to Table 6.14, shows that Black owners are much more likely not to apply for a loan fearing they will be denied. On the basis of this evidence that seems like a sensible decision – if and when they do apply they are more than twice as likely as Whites to have their application rejected. This is evident in the Western Region as well and in the construction industries.

Finally, Table 6.22, which is comparable to Table 6.11, suggests that when the institution does not know the race of the applicant – as is the case by law in an application for a credit card – there are no differences in the usage of credit cards. Other analysis (not reported) finds no evidence of race effects on the average monthly charge to the card or the monthly balance or the balance remaining at the end of the month. There was also no evidence of any race effects in the use of credit cards in the Western Region (rows 3 and 4) or in construction (results not reported here).

Our confidence in the strength of our findings is elevated by these findings from the 1998 survey that strongly confirm the results obtained from the 1993 survey. Unfortunately, minorities and especially Blacks continue to be discriminated against in the market for credit. By 1998, this discrimination appears to be on the increase for Blacks and to be expanding to impact the other minority groups as well and possibly even White women. This is an important market failure, and one which cities and counties such as Denver cannot simply ignore if they are to avoid passive participation in a discriminatory market place.

### **I. Analysis of Denver Area Credit Survey, 2005**

It could be claimed, wrongly in our view, that the data used so far in this Study are not relevant to Denver's geographic market area (as defined above in Chapter III) because they are drawn from a survey of the nation as a whole and from the Western region and not strictly from Colorado or Denver. Such a criticism is inappropriate because (a) the 1993 and 1998 data are of high quality; (b) when disaggregated estimates are obtained, for both the Western region and for the construction industries, they are quite similar to those obtained from the national data; (c) the market for small business credit is not primarily local as firms commonly make use of out-of-state financial institutions. As a formal check as to the validity of such a criticism, we conducted our own mail survey within Denver's geographic market area, using a questionnaire based closely on that used in the 1993 NSSBF and the 1998 SSBF. The questionnaire was mailed to a large random sample of minorities, women, and non-minorities in construction, architecture and engineering services, other construction-related goods and services, and airport concessions-related goods and services drawn from the Baseline Business Universe described in Chapter IV. We obtained a total of 561 responses, or about 6 percent of all surveys delivered. As we show below, the results obtained from this survey are remarkably consistent with those reported earlier for the Western region as well as the U.S. as a whole.

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Table 6.23 presents sample means from these data for *all* of the firms in the Denver sample that applied for credit at any time in the three years prior to the survey. The estimates indicate that minority-owned firms reported a far higher incidence of credit denial than White-owned firms. Over the preceding three years 29 percent of White-owned firms had credit applications turned down (row 3) compared with 75 percent of minority-owned firms. Regarding the most recent credit application (row 1) the figures were 14 percent and 86 percent, respectively. These differences between minority- and White-owned firms are remarkably similar to those found, for example, for White- and Black-owned firms in the 1993 NSSBF for the three year period up to 1993 for the U.S. as a whole (Table 6.1) or for the Western region (Table 6.2)—27 percent and 66 percent for Whites compared with Blacks nationally, and 34 percent and 73 percent in the Western region, respectively.

Table 6.24 shows that minority-owned firms in our Denver Area credit survey were younger, smaller, and less creditworthy than firms owned by other racial groups, measured by whether the owner had: (a) been bankrupt at any time during the preceding seven years, (b) been delinquent for more than 60 days on personal obligations during the previous three years, (c) been delinquent for more than 60 days on business obligations during the previous three years, or (d) had legal judgments entered against them during the previous three years.

Table 6.25 reports some qualitative evidence on the nature of the problems that firms are experiencing now. Seventeen percent of Black-owned firms reported that credit market conditions were a serious problem compared with only 3 percent of White-owned firms. Interestingly, there are fewer differences between minority- and White-owned firms in the distribution of responses to the other questions. The main exceptions are insurance costs, which are much more likely to be a serious problem for White-owned firms, and competition with larger firms, which is much more likely to be a serious problem for Minority-owned firms.

Next we examine whether loan denial probabilities in the Denver Area survey are similar to those reported above for the nation and the Western region using the 1993 and 1998 data. Recall that it was reported in these tables that Black-owned firms were more than twenty percentage points more likely to have a loan request denied than were White-owned firms, even after controlling for differences in creditworthiness. This result is confirmed in Table 6.26 using the Denver area data. Columns 1-3 relate to the most recent application and columns 4-6 to any application that had occurred over the preceding three years, the latter being the same definition used in Table 6.8 and Table 6.9 based on the 1993 NSSBF. The raw difference for Blacks in column 4 is 45 percentage points<sup>204</sup> which falls to 32 percentage points once a variety of controls are included in column 6 allowing for a number of firm characteristics. The number of controls is somewhat less than included in the earlier tables but this is driven by the fact that the sample size is smaller and a desire not to over-parameterize the model. Despite the relatively smaller sample size the results are striking—minority-owned and woman-owned firms are far more likely to have a loan application denied than comparable White-owned firms.

NERA has conducted local credit market surveys such as the one for Denver in six other jurisdictions since 1999. These include the Chicago metropolitan area in 1999, the State of

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<sup>204</sup>Numbers in parentheses relate to the equivalent estimates for the most recent application in columns 1-3.

Maryland in 2000, the Jacksonville, Florida metropolitan area in 2002, the Baltimore-Washington, DC metropolitan area in 2003, the St. Louis metropolitan area in 2004, and the State of Maryland again in 2005. The Chicago, Jacksonville, Baltimore and St. Louis surveys focused on construction, architecture/engineering, and related industries, while the two Maryland surveys included construction, architecture/engineering, other construction-related services, commodities, information technology, maintenance services, and other services. The Chicago, Maryland I, and Jacksonville survey questionnaires followed the format of the 1993 NSSBF while the Baltimore, St. Louis, Maryland II, and Denver surveys followed the format of the 1998 SSBF questionnaire. As a further check on our findings for Denver, we combined the results of these seven surveys together in a consistent format and re-estimated the basic loan denial model on this larger file, including an indicator variable for Denver and terms interacting race and sex with Denver to check if Denver is different from the other areas. These results appear in Table 6.27 and are, again, remarkably similar to results seen in Tables 6.8, 6.9, 6.17, 6.18, and 6.26—raw differences in denial rates between Blacks and Whites are between 31 and 39 percentage points, declining to between 28 and 38 percentage points when interaction terms and creditworthiness controls are included.

The finding that loan denial probabilities from the Denver Area Credit Survey are similar to those reported earlier using the 1993 NSSBF and 1998 SSBF data is repeated in Table 6.28. In this table we consider whether minority-owned firms are treated differently from White-owned firms when requesting credit from other sources; more precisely, we examine the probability that a firm uses either a business credit card (row one) or a personal credit card (row two) to finance business expenses, holding constant other differences across firms. In neither case could we find any evidence that minority-owned firms were less likely to have access to such cards.

We additionally model the rate of interest charged, conditional upon receiving loan approval, using our seven-jurisdiction dataset, as shown in Table 6.29. Results are very similar to that observed in Table 6.12 for 1993 and Table 6.19 for 1998. Blacks pay 105 basis points more for their credit than Whites, declining to between 71 and 77 basis points when creditworthiness and geographic controls are added.

Finally, as a check on the representativeness of our Denver credit market survey, we conducted a secondary survey of non-respondents in order to check whether they were systematically different from the respondents on important variables, such as the loan denial rate. We selected random sample of 450 M/W/DBE and non-M/W/DBE non-respondents and successfully completed 226 interviews, for a response rate of 50.2 percent. Greatly shortened interviews were given to the non-respondents; such questions that were asked were identical to those asked of the respondents. To test for response bias we pooled together our completed interviews for respondents and non-respondents and performed a regression analysis (once again using Stata's Probit and "dprobit" commands) using the answer to the loan denial question as the dependent variable and including indicator variables for minority ownership, female ownership, non-respondent status, and an interaction term between non-respondent status and minority ownership. Both the application rate and the denial rate in the main survey were higher than in the non-response survey. Nevertheless, even in the pooled regression, the coefficient on M/W/DBE status still demonstrates statistically significantly higher loan denial rates for M/W/DBE firms.

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Table 6.30 reports the results of estimating a series of loan denial equations that include a non-response dummy included alone as well as interacted with the minority ownership dummy. Column 1 includes only respondents from the main survey. The results are quite similar in column 2 when the non-respondents are added. Similar results are observed in columns 3 and 4 when the bankruptcy variable is added as a control.

### J. Caveats

The results presented indicate that Black-owned firms face obstacles in obtaining credit that are unrelated to their creditworthiness. Although one explanation for these findings is that these firms are discriminated against, we raise a few additional factors worth considering before one can draw definitive conclusions.

First, as in any regression-based study, our analysis hinges upon the proposition that all the factors that are related to loan denial rates have been included in our statistical model. If, for example, Blacks possess some unobservable characteristic that makes them less creditworthy, then our statistical finding would overstate the difference in loan denial rates. To reduce this possibility, the models we have estimated include an extensive array of factors that could conceivably affect loan decisions. Moreover, we have also estimated several alternative specifications that could potentially identify the impact of such a bias. Throughout, we have consistently found that Blacks are disadvantaged in the small business credit market and that our specification tests support the interpretation of discrimination.

Another potential criticism is that this Study has examined loan denial rates rather than loan default rates; some have claimed that the latter provides a more appropriate strategy for identifying discrimination. For example, if banks only approve loans for relatively good Black firms then Black firms should exhibit relatively low default rates. Such an approach has several significant shortcomings that are detailed in Browne and Tootell (1995) and Ladd (1998). For instance, one problem is that it relies on the distribution of default probabilities being similar for Black and White applicants meeting the acceptance standard used for White firms. A further problem is that it assumes that the loan originators know with a high degree of precision what determines defaults, however little hard information exists on what causes default. Additionally, it would be hard to disentangle the factors associated with differences in default rates between White- and Black-owned firms given the fact that Black-owned firms that obtain credit are charged higher interest rates, as we have shown. Finally, such an analysis would require longitudinal data, tracking firms for a few years following loan origination. Such data do not exist. While we have highlighted the potential limitations of such an analysis, we believe that it would be fruitful for this sort of longitudinal data collection to take place and for future research to investigate this question more fully.

In addition, many of the criticisms levied against Munnell et al. (1996) may be relevant here as well. Yet these criticisms appear to have been effectively countered by some of the authors (see Browne and Tootell, 1995; Tootell, 1996). What is important to keep in mind in reference to this work compared with Munnell et al. (1996) is the magnitude of the estimated racial disparity. The

absolute size of the raw racial differences found in the mortgage study are considerably smaller than those observed in this Study regarding business credit.<sup>205</sup>

The magnitude of the racial difference in small business loan approval rates is substantial, even after controlling for observed differences in creditworthiness, and considerably larger than that found in the analysis of discrimination in mortgage markets. Why do the results for small business loans differ so markedly from those obtained from mortgage loans? First, many mortgages are sold in the secondary market and a substantial fraction of mortgage lenders have little intention of keeping the loans they make. This added “distance” in the transaction might reduce the likelihood of discrimination. As Day and Liebowitz (1998, p.6) point out, “economic self-interest, therefore, should reduce racial discrimination in this market more completely than in many others.” A highly sophisticated secondary market for loans to small firms does not exist. Second, the presence of special programs and regulatory incentives to encourage banks and others to increase their mortgage lending to minorities gives these groups some advantages in obtaining a mortgage.

Some of the difference in denial rates between the races in both types of studies appears to be due to differences in the characteristics of the applicants. Even after controlling for these differences, however, the gap in denial rates in the small business credit market is considerably larger than that found in the mortgage market.<sup>206</sup> The larger size and significance of the effects found in our analyses significantly reduce the possibility that the observed differences can be explained away by some quirk of the econometric estimation procedure.

## K. Conclusions

Our analysis finds significant evidence that Black-owned businesses face impediments to obtaining credit that go beyond observable differences in their creditworthiness. These firms are more likely to report that credit availability was a problem in the past and expect it to be a problem in the future. In fact, these concerns prevented more Black-owned firms from applying for loans because they feared being turned down due to prejudice or discrimination. We also found that loan denial rates are significantly higher for Black-owned firms than for White-owned firms even after taking into account differences in an extensive array of measures of creditworthiness and other characteristics. This result appears to be largely insensitive to geographic location or to changes in econometric specification. Overall, the evidence is consistent that Black-owned firms and other minority-owned firms are disadvantaged in the market for small business credit, which would traditionally be attributed to discrimination. Evidence is mixed with respect to whether female-owned firms are discriminated against in this market.

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<sup>205</sup>In the Boston Fed study 10 percent of Whites’ mortgage applications were rejected compared with 28 percent for Blacks; loan denial rates for business credit in this study were 27 percent and 66 percent for White- and Black-owned firms.

<sup>206</sup>The gap in denial rates between Blacks and Whites with similar characteristics is 23 percentage points in the small business credit market compared with 7 percentage points in the mortgage market.

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### L. Tables

**Table 6.1. Selected Sample Means of Loan Applicants from 1993 NSSBF Data**

	All	White	Black	Hispanic	Other Races
% of Firms Denied in the Last Three Years	28.8	26.9	65.9	35.9	40.0
Credit History of Firm/Owners					
% Owners with Judgments Against Them	4.8	4.1	16.9	5.2	15.2
% Firms Delinquent in Business Obligations	24.2	23.1	49.0	25.1	31.6
% Owners Delinquent on Personal Obligations	14.0	12.6	43.4	14.8	24.5
% Owners Declared Bankruptcy in Past 7yrs	2.4	2.4	5.3	2.0	0.8
Other Firm Characteristics					
% Female-Owned	17.9	18.1	18.2	9.7	23.1
Sales (in 1,000s of 1992 \$)	1,795	1,871	589	1,361	1,309
Profits (in 1,000s of 1992 \$)	87	85	60	189	54
Assets (in 1,000s of 1992 \$)	889	922	230	746	747
Liabilities (in 1,000s of 1992 \$)	547	573	146	309	486
Owner's Years of Experience	18.3	18.7	15.3	15.9	14.9
Owner's Share of Business	77.1	76.5	86.4	83.9	77.1
% ≤ 8 <sup>th</sup> Grade Education	0.8	0.7	0	3.4	1.0
% 9 <sup>th</sup> -11 <sup>th</sup> Grade Education	2.2	2.2	3.7	1.8	1.2
% High School Graduate	19.6	19.7	12.8	27.7	14.9
% Some College	28.0	28.3	36.0	20.6	19.8
% College Graduate	29.2	29.2	28.0	24.1	36.5
% Postgraduate Education	20.2	19.9	19.5	22.3	26.6
% Line of credit	48.7	49.1	35.8	52.8	43.7
Total Full-time Employment in 1990	11.4	11.8	6.8	9.3	8.7
Total Full-time Employment in 1992	13.6	13.9	8.3	10.8	12.3
Firm age, in years	13.4	13.6	11.5	13.3	9.3
% New Firm Since 1990	9.4	9.4	13.0	6.4	9.5
% Firms Located in MSA	76.5	75.1	91.2	90.7	85.7
% Sole Proprietorship	32.8	32.3	48.6	38.2	24.2
% Partnership	7.8	7.8	7.7	6.7	7.9
% S Corporation	26.1	27.1	11.7	13.7	27.1
% C Corporation	33.4	32.8	32.1	41.4	40.8
% Existing Relationship with Lender	24.6	24.7	12.8	30.0	25.7
% Firms with Local Sales Market	54.1	54.7	42.9	55.0	47.4
Characteristics of Loan Application					
Amount Requested (in 1,000s of 1992\$)	289	299	122	172	298
% Loans to be Used for Working Capital	49.5	48.4	62.5	62.3	51.6
% Loans to be Used for Equipment/Machinery	15.2	14.9	15.2	16.0	21.7
% Loans to be Used for Land/Buildings	11.6	11.9	3.7	10.5	11.9
% Loan to be Backed by Real Estate	28.3	28.6	24.7	26.2	24.7
Sample Size (unweighted)	2,007	1,648	170	96	93

Notes: Sample weights are used to provide statistics that are nationally representative of all small businesses. Some variable means are computed from slightly smaller samples because of missing values. Sample restricted to firms that applied for a loan over the preceding three years. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.2. Selected Sample Means of Loan Applicants – Western Region**

	All	White	Black	Hispanic
% of Firms Denied in the Last Three Years	35.1	34.4	72.5	23.7
Credit History of Firm/Owners				
% Owners with Judgments Against Them	6.7	5.2	19.0	13.2
% Firms Delinquent in Business Obligations	19.0	18.5	33.2	26.9
% Owners Delinquent on Personal Obligations	14.6	12.9	39.9	27.5
% Owners Declared Bankruptcy in Past 7yrs	1.8	1.7	6.7	3.1
Other Firm Characteristics				
Sales (in 1,000s of 1992 \$)	787	821	387	719
Profits (in 1,000s of 1992 \$)	570	558	285	104
Assets (in 1,000s of 1992 \$)	458	476	201	496
Liabilities (in 1,000s of 1992 \$)	238	256	979	160
Owner's Years of Experience	18.1	18.6	17.1	16.1
Owner's Share of Business	83	82	91	91
% Line of credit	25.4	26.7	23.4	22.6
Total Full-time Employment in 1990	7.1	7.3	5.3	7.8
Total Full-time Employment in 1992	7.9	8.1	6.0	8.8
Firm age, in years	13.4	13.7	12.5	13.3
% New Firm Since 1990	9.0	8.2	7.7	12.2
% Firms Located in MSA	84	83	97	92
% Existing Relationship with Lender	6.3	6.5	2.3	10.8
% Firms with Local Sales Market	63.9	62.2	59.2	73.5
Characteristics of Loan Application				
Amount Requested (in 1,000s of 1992\$)	391	417	97	246
% Loans to be Used for Working Capital	49	48	62	59
% Loans to be Used for Equipment/Machinery	19	19	13	30
% Loans to be Used for Land/Buildings	10	10	3	5
% Loan to be Backed by Real Estate	22	22	26	18
Sample Size (unweighted)	415	319	31	27

Notes: Sample weights are used to provide statistics that are nationally representative of all small businesses. Some variable means are computed from slightly smaller samples because of missing values. "Other Races" are not reported separately due to small sample size. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.3. Problems Firms Experienced During Preceding 12 Months - USA**

	All	White	Black	Hispanic	Other Races
<u>Credit Market Conditions</u>					
% reporting not a problem	66	67	43	59	66
% reporting somewhat of a problem	20	20	26	18	21
% reporting serious problem	14	13	31	23	13
<u>Other Potential Problems (% reporting problem is serious)</u>					
Training costs	7	7	7	6	4
Worker's compensation costs	22	21	19	30	29
Health insurance costs	33	32	38	45	35
IRS regulation or penalties	12	12	17	17	14
Environmental regulations	8	8	6	7	11
Americans with Disabilities Act	3	3	4	3	4
Occupational Safety and Health Act	5	5	4	4	6
Family and Medical Leave Act	3	3	5	3	5
Number of observations (unweighted)	4637	3559	442	290	346

Source: Authors' calculations from 1993 NSSBF.

**Table 6.4. Problems Firms Experienced During Preceding 12 Months – Western Region**

	All	White	Black	Hispanic
<u>Credit Market Conditions</u>				
% reporting not a problem	65	66	42	60
% reporting somewhat of a problem	21	21	18	18
% reporting serious problem	14	13	40	22
<u>Other Potential Problems (% reporting problem is serious)</u>				
Training costs	7	8	10	8
Worker's compensation costs	22	19	25	36
Health insurance costs	28	27	40	46
IRS regulation or penalties	14	14	18	12
Environmental regulations	11	11	12	12
Americans with Disabilities Act	3	3	3	5
Occupational Safety and Health Act	4	4	3	5
Family and Medical Leave Act	3	3	5	2
Number of observations (unweighted)	1095	757	83	94

Note: "Other Races" are not reported separately due to small sample size. Source: Authors' calculations from 1993 NSSBF.

Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.5. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months - USA**

	All	White	Black	Hispanic	Other Races
Credit availability	6	6	21	5	4
Health care, health insurance	21	22	12	14	15
Taxes, tax policy	6	6	3	9	3
General U.S. business conditions	12	12	9	14	17
High interest rates	5	6	2	3	4
Costs of conducting business	3	3	4	4	4
Labor force problems	4	3	4	6	4
Profits, cash flow, expansion, sales	10	10	20	10	12
Number of observations (unweighted)	4,388	3,383	424	323	258

Source: Authors' calculations from 1993 NSSBF.

**Table 6.6. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months - Western**

	All	White	Black	Hispanic
Credit availability	6	6	21	3
Health care, health insurance	17	19	8	5
Taxes, tax policy	4	4	1	8
General U.S. business conditions	15	14	23	14
High interest rates	5	5	1	5
Costs of conducting business	3	3	2	5
Labor force problems	2	2	1	1
Profits, cash flow, expansion, sales	11	10	24	14
	1040	718	82	83
Number of observations (unweighted)	6	6	21	3

Note: "Other Races" are not reported separately due to small sample size. Source: Authors' calculations from 1993 NSSBF.

Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.7. Types of Problems Facing Your Business, by Race and Gender (%)**

	White Male	White Female	Minority Male	Minority Female	Black	Hispanic	Asian
Availability of credit	19	23	54	38	46	52	34
Rising health care costs	60	49	50	41	31	42	66
Excessive tax burden	49	46	48	42	46	34	51
Lack of qualified workers	37	28	33	17	22	20	34
Rising energy costs	37	35	36	35	29	34	44
Rising costs of materials	44	47	36	47	53	42	32
Legal reform	21	15	15	12	11	10	17
<b>Number firms</b>	<b>415</b>	<b>356</b>	<b>80</b>	<b>81</b>	<b>55</b>	<b>50</b>	<b>41</b>

Notes: Total percentages may be greater than 100% due to respondents having the option to select multiple choices. Minorities also include 14 firms owned by Native Americans.

Source: U.S. Chamber of Commerce (2005), Appendix tables, page 55, downloadable at [www.uschamber.com/publications/reports/050524\\_fundingsources.htm](http://www.uschamber.com/publications/reports/050524_fundingsources.htm).

## Statistical Disparities in Capital Markets

**Table 6.8. Determinants of Loan Denial Rates - USA**

	(1)	(2)	(3)	(4)	(5)
Black	.426 (10.87)	.277 (6.69)	.225 (5.39)	.226 (5.12)	.234 (5.08)
Asian/Pacific Islanders	.207 (3.90)	.160 (3.02)	.120 (2.27)	.101 (1.87)	.100 (1.80)
American Indian/Alaskan Eskimo	-.051 (0.35)	-.153 (1.17)	-.109 (0.82)	-.062 (0.43)	-.092 (0.64)
Hispanic	.113 (2.33)	.061 (1.27)	.064 (1.31)	.036 (0.72)	.033 (0.65)
Female-Owned	.073 (2.54)	.039 (1.36)	.037 (1.30)	.026 (0.88)	.025 (0.85)
Judgments		.143 (2.84)	.129 (2.56)	.124 (2.39)	.121 (2.28)
Firm delinquent		.176 (6.53)	.182 (6.57)	.197 (6.86)	.212 (7.12)
Personally delinquent		.160 (4.41)	.128 (3.55)	.125 (3.40)	.120 (3.18)
Bankrupt past 7 yrs		.208 (3.11)	.179 (2.67)	.164 (2.39)	.167 (2.33)
\$1992 profits(*10 <sup>8</sup> )		-.181 (0.89)	-.342 (1.59)	-.378 (1.73)	-.395 (1.78)
\$1992 Sales*(10 <sup>8</sup> )		-.376 (3.10)	-.749 (3.28)	-.764 (3.24)	-.798 (3.31)
\$1992 Assets (*10 <sup>8</sup> )		.133 (0.50)	.427 (0.86)	.189 (0.45)	.188 (0.44)
\$1992 liabilities (*10 <sup>8</sup> )		.246 (0.61)	.427 (0.86)	.363 (0.72)	.425 (0.82)
Owner years experience		-.003 (2.59)	-.001 (1.27)	-.002 (1.53)	-.002 (1.70)
Owners' share of business		.001 (1.93)	.000 (0.73)	.000 (0.25)	.000 (0.30)
Owner's Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Region (8 indicator variables)	No	No	No	Yes	Yes
Industry (59 indicator variables)	No	No	No	Yes	Yes
Month /Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2,007	2,007	1,997	1,976	1,964
Pseudo R <sup>2</sup>	.0606	.1411	.2275	.2539	.2725
Chi <sup>2</sup>	143.0	333.1	534.3	592.5	632.7
Log likelihood	-1109.0	-1014.0	-907.3	-870.4	-844.5

Notes: Reported estimates are derivatives from Probit models, t-Statistics are in parentheses. "Other firm characteristics" include variables indicating whether the firm had a line of credit, 1990 employment, firm age, metropolitan area, a new firm since 1990, 3 legal form of organization, 1990-1992 employment change, existing long run relation with lender, geographic scope of market (regional, national or international), the value of the firm's inventory, the level of wages and salaries paid to workers, officers' cash holdings, and the value of land help by the firm. "Characteristics of the loan" include the size of the loan applied for, a variable indicating whether the loan was backed by real estate, and eleven variables indicating the intended use of the loan. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.9. Determinants of Loan Denial Rates – Western Region**

	(1)	(2)	(3)	(4)	(5)
Black	.436 (10.06)	.306 (6.72)	.250 (5.45)	.250 (5.13)	.257 (5.09)
Asian/Pacific Islanders	.312 (4.32)	.267 (3.65)	.210 (2.85)	.191 (2.54)	.185 (2.40)
Hispanic	.131 (2.29)	.102 (1.77)	.116 (1.92)	.081 (1.33)	.080 (1.29)
Female-Owned	.068 (2.06)	.032 (0.97)	.038 (1.16)	.033 (0.99)	.035 (1.02)
Black*Western	-.026 (0.29)	-.089 (1.12)	-.083 (1.08)	-.080 (1.04)	-.082 (1.06)
Asian/Pacific* Western	-.185 (2.55)	-.172 (2.36)	-.148 (2.07)	-.142 (1.96)	-.138 (1.88)
Hispanic*Western	.079 (0.81)	.139 (1.39)	.163 (1.62)	.134 (1.32)	.140 (1.35)
Female-Owned*Western	-.006 (0.09)	.004 (0.07)	-.020 (0.32)	-.031 (0.51)	-.036 (0.58)
Western region	-.060 (0.33)	-.173 (1.03)	-.200 (1.27)	-.140 (0.81)	-.150 (0.87)
Creditworthiness controls (10 variables)	No	Yes	Yes	Yes	Yes
Owner's Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Region (7 indicator variables)	No	No	No	Yes	Yes
Industry (59 indicator variables)	No	No	No	Yes	Yes
Month /Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2007	2,007	1,997	1,976	1,964
Pseudo R <sup>2</sup>	.0667	.1451	.2293	.2535	.2715
Chi <sup>2</sup>	158.1	342.7	538.5	591.4	630.4
Log likelihood	-1101.5	-1009.2	-905.1	-871.0	-845.6

Note: Creditworthiness controls are those used in Table 6.8 above.

## Statistical Disparities in Capital Markets

**Table 6.10. Alternative Models of Loan Denials**

Specification	Black	Black* the Western region	Asian	Hispanic	Sample Size
All	.229 (5.10)	-.020 (0.49)	.118 (2.23)	.065 (1.32)	1997
<i>Organization Type</i>					
1) Proprietorships and Partnerships	.234 (2.87)	.078 (0.50)	.203 (1.96)	.076 (0.90)	535
2) Corporations	.210 (3.88)	-.074 (0.82)	.093 (1.48)	.054 (0.87)	1457
<i>Age of Firm</i>					
3) 12 Years or Under	.260 (4.28)	-.052 (0.25)	.178 (2.56)	.031 (0.35)	1071
4) Over 12 Years	.184 (2.77)	-.031 (0.29)	-.010 (0.12)	.104 (1.51)	922
<i>1990 Firm Size</i>					
5) Fewer than 10 Employees	.217 (3.93)	-.065 (0.70)	.106 (1.48)	.029 (0.47)	962
6) 10 or More Employees	.227 (2.91)	.084 (0.53)	.147 (1.78)	.150 (1.86)	1031
<i>Use of Loan</i>					
7) Working Capital	.247 (4.35)	-.013 (0.12)	.049 (0.74)	-.010 (0.16)	1085
8) Other Use	.168 (2.27)	-.031 (0.24)	.241 (2.73)	.143 (1.91)	912
<i>Sales Market</i>					
9) Local	.169 (2.48)	-.119 (1.15)	.126 (1.82)	-.005 (0.17)	873
10) Regional, National, or international	.287 (4.78)	.027 (0.25)	.069 (0.86)	.158 (1.97)	1124
<i>Creditworthiness</i>					
11) No Past Problems	.207 (3.73)	.013 (0.12)	.165 (3.01)	.027 (0.60)	1385
12) One Past Problem	.235 (2.32)	.188 (0.73)	-.076 (0.49)	.202 (1.44)	376
13) More Than One Problem	.154 (2.86)	.063 (0.30)	.029 (0.55)	.073 (1.38)	1174

Notes: Reported estimates are derivatives from Probit models, t-Statistics are in parentheses. Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8. The dependent variable in all specifications represents an indicator for whether or not a loan application was denied. Native Americans include both American Indians and Alaskan Eskimo. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.11. Models of Credit Card Use - USA**

<b>Specification</b>	<b>Black</b>	<b>Asian</b>	<b>Native American</b>	<b>Hispanic</b>	<b>Sample Size</b>
1) Business Credit Card	.032 (1.26)	-.102 (3.51)	.072 (0.86)	.029 (0.95)	4,618
2) Personal Credit Card	.015 (0.58)	-.028 (0.96)	-.004 (0.05)	-.045 (1.50)	4,618

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses.

Source: Authors' calculations from 1993 NSSBF.

**Table 6.12. Models of Credit Card Use – Western Region**

<b>Specification</b>	<b>Black</b>	<b>Hispanic</b>	<b>Sample Size</b>
1) Business Credit Card	.045 (0.98)	.136 (1.42)	406
2) Personal Credit Card	-.013 (0.13)	.083 (0.76)	411

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8 but excluding the loan characteristics. The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. In all specifications, the sample size is all firms. Other races are excluded due to sample size limitations.

Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.13. Models of Interest Rate Charged**

Specification	Black	Asian	Native American	Hispanic	Sample Size
1) All loans (controls as in column 5, Table 6.7)	.970 (3.02)	.010 (0.04)	-.173 (0.18)	-.106 (0.44)	1,448
2) No credit problems	.957 (2.27)	.353 (0.98)	.886 (1.04)	.411 (1.40)	1,133
Organization Type					
3) Proprietorships and Partnerships	1.556 (2.27)	.255 (0.34)	2.588 (0.90)	1.071 (1.87)	362
4) Corporations	.613 (1.51)	.354 (1.05)	-.660 (0.97)	.441 (1.38)	1,086
1990 Firm Size					
5) Fewer than 10 Employees	1.303 (2.81)	-.033 (0.07)	-.263 (0.21)	.933 (2.29)	656
6) 10 or More Employees	.595 (0.97)	.499 (1.15)	-.213 (0.26)	.300 (0.69)	792
Sales Market					
7) Local	1.158 (2.12)	-.236 (0.44)	1.481 (0.95)	.637 (1.65)	631
8) Regional, National, or International	1.205 (2.75)	1.146 (2.84)	-1.361 (1.84)	.476 (1.16)	817

Notes: Reported estimates are OLS coefficients, t-statistics in parentheses. Each line of this table represents a separate regression with all of the control variables as Column 5 of Table 6.8 (except where specified) as well as: an indicator variable for whether the loan request was for a fixed interest rate loan, the length of the loan, the size of the loan, whether the loan was guaranteed, whether the loan was secured by collateral, and 7 variables identifying the type of collateral used if the loan was secured. The sample consists of firms who had applied for a loan and had their application approved. Native Americans include American Indians and Alaskan Eskimo. 'No credit problems' means that neither the firm nor the owner had been delinquent on payments over 60 days, no judgments against the owner for the preceding 3 years and the owner had not been bankrupt in the preceding 7 years. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.14. Racial Differences in Failing to Apply for Loans Fearing Denial**

Specification	Black	Asian	Native American	Hispanic
<b>a) USA</b>				
No Other Control Variables (n=4,635)	0.400 (16.66)	0.096 (3.56)	0.148 (1.92)	0.225 (7.97)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=4,616)	.264 (10.49)	.059 (2.19)	.039 (0.55)	.161 (5.63)
<b>b) Western region</b>				
No Other Control Variables (n=1095)	.429 (7.56)	.014 (0.34)	n/a	.183 (3.57)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=1087)	.301 (4.85)	-.021 (0.52)	n/a	.081 (1.61)
<b>c) Construction</b>				
No Other Control Variables (n=525)	.359 (5.49)	-.004 (0.03)	.089 (0.52)	.109 (1.40)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=521)	.176 (3.38)	-.037 (0.47)	.061 (0.45)	-.005 (0.10)

Notes: Reported estimates are Probit derivatives, t-Statistics in parentheses. Sample consists of all firms. Native Americans include American Indians and Alaskan Eskimo. Dependent variable is unity if the firm said they did not apply for a loan fearing denial, zero otherwise. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.15. Models of Failure to Obtain Credit Among Firms that Desired Additional Credit**

Specification	Black	Asian	Native American	Hispanic
<b>a) USA</b>				
No Other Control Variables (n=2,647)	.442 (14.44)	.287 (6.59)	.194 (1.66)	.275 (7.13)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=2,634)	.277 (7.39)	.174 (3.52)	.002 (0.01)	.153 (3.41)
<b>b) Western Region</b>				
No Other Control Variables (n=589)	.379 (5.59)	.160 (2.45)		.203 (2.89)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=583)	.218 (2.36)	.060 (0.72)		.029 (0.31)
<b>c) Construction</b>				
No Other Control Variables (n=310)	.391 (4.60)	-.135 (0.69)	-	.218 (1.98)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=307)	.228 (2.12)	-.262 (1.08)	.071 (0.55)	-.036 (0.32)

Notes: Reported estimates are Probit derivatives, t-Statistics in parentheses. The sample consists of all firms that applied for loans along with those who needed credit, but didn't apply for fear of refusal. Failure to obtain credit includes those firms that were denied and those that did not apply for fear of refusal. Dependent variable is unity if the firm failed to obtain credit and zero if the firm applied for credit and had their loan application approved. Native Americans include American Indians and Alaskan Eskimo. Source: Authors' calculations from 1993 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.16. What is the Most Important Problem Facing Your Business Today?**

	White Males	Black	Other	Hispanic	White Females	Total
Financing and interest rates	5.8	18.2	8.2	10.0	6.5	6.8
Taxes	7.7	1.9	3.1	4.9	6.6	6.8
Inflation	0.4	0.6	1.0	0.0	0.4	0.4
Poor sales	7.0	5.9	7.0	12.4	8.4	7.5
Cost/availability of labor	3.6	3.3	3.5	2.4	4.4	3.7
Government regulations/red tape	7.2	3.0	8.1	5.5	6.3	6.8
Competition (from larger firms)	11.1	10.7	18.4	8.8	0.6	11.3
Quality of labor	14.2	11.0	8.7	9.8	9.1	12.5
Cost and availability of insurance	2.5	1.0	0.0	0.5	2.3	2.1
Other	11.6	10.0	16.0	8.5	2.4	11.8
Cash flow	4.5	10.9	3.5	7.5	3.3	4.6
Capital other than working capital	1.2	1.7	0.8	3.8	1.5	1.4
Acquiring and retaining new customers	3.1	3.9	1.9	5.6	3.2	3.2
Growth of firm/industry	1.0	1.0	0.1	0.4	0.6	0.8
Overcapacity of firm/industry	0.1	0.0	0.3	0.0	0.0	0.1
Marketing/advertising	2.0	3.9	2.8	3.2	3.4	2.5
Technology	1.5	1.2	2.6	2.1	1.2	1.5
Costs, other than labor	2.7	1.8	3.6	2.5	3.8	2.9
Seasonal/cyclical issues	1.3	1.2	0.4	0.9	0.7	1.1
Bill collection	3.0	2.2	2.7	3.1	2.7	2.9
Too much work/not enough time	3.6	2.2	1.4	4.0	5.6	3.9
No problems	4.8	4.3	5.8	4.2	6.6	5.2

Source: Authors' calculations from the 1998 SSBF (n=3561).

## Statistical Disparities in Capital Markets

**Table 6.17. Loan Denial Probabilities - USA**

	(1)	(2)	(3)	(4)	(5)	(6)
Black	.389 (6.83)	.269 (4.46)	.247 (4.13)	.253 (4.07)	.276 (4.17)	.306 (4.50)
Asians	.173 (2.77)	.172 (2.73)	.147 (2.34)	.129 (2.03)	.152 (2.23)	.159 (2.39)
Hispanic	.315 (4.67)	.266 (3.83)	.229 (3.36)	.198 (2.87)	.220 (3.09)	.211 (3.01)
Female-Owned	.036 (0.87)	.001 (0.02)	-.006 (0.14)	-.008 (0.18)	.022 (0.50)	.035 (0.81)
Judgments		.359 (4.11)	.335 (3.91)	.321 (3.74)	.366 (3.92)	.371 (3.92)
Firm delinquent		.132 (3.29)	.167 (4.00)	.167 (3.98)	.185 (4.27)	.179 (4.16)
Personally delinquent		.215 (4.46)	.169 (3.53)	.169 (3.50)	.152 (3.20)	.159 (3.35)
Bankrupt past 7 years		.615 (4.28)	.613 (4.01)	.620 (4.01)	.600 (3.46)	.603 (3.54)
Owner years experience		-.005 (3.14)	-.000 (0.18)	-.000 (0.16)	.001 (0.63)	.001 (0.71)
Dun & Bradstreet credit ratings (4)	No	Yes	Yes	Yes	Yes	Yes
Other firm characteristics	No	No	Yes	Yes	Yes	Yes
Characteristics of the loan	No	No	No	No	No	Yes
Region (9)	No	No	No	Yes	Yes	Yes
Industry (37)	No	No	No	No	Yes	Yes
N	927	927	927	927	927	927
Pseudo R <sup>2</sup>	.0622	.1990	.2351	.2415	.3072	.3183
Chi <sup>2</sup>	65.56	209.8	247.8	254.6	323.7	335.5

Notes: "Other firm characteristics" include firm age, 1998 employment, 5 type of organization indicator variables, 4 indicator variables identifying if the firm's market was regional, national or international, the value of home equity (zero if didn't own home), owner's net worth without home equity. "Characteristics of the loan" include the size of the loan being applied for, five indicators to identify the year the application for the loan was made.

Source: Authors' calculations from 1998 SSBF.

## Statistical Disparities in Capital Markets

**Table 6.18. Loan Denial Probabilities – Western Region**

	(1)	(2)	(3)	(4)	(5)	(6)
Black	.423 (6.85)	.322 (4.91)	.302 (4.62)	.332 (4.78)	.312 (4.42)	.34 (4.73)
Asians	.123 (1.47)	.168 (1.96)	.162 (1.89)	.155 (1.78)	.145 (1.65)	.161 (1.84)
Hispanic	.341 (3.78)	.247 (2.62)	.218 (2.34)	.204 (2.14)	.202 (2.18)	.208 (2.26)
Female-Owned	.057 (1.13)	.019 (0.37)	.013 (0.27)	.023 (0.46)	.057 (1.07)	.070 (1.32)
Black*Western	-.096 (0.75)	-.168 (1.42)	-.176 (1.73)	-.172 (1.70)	-.153 (1.61)	-.148 (1.59)
Asians*Western	.051 (0.43)	-.027 (0.24)	-.047 (0.46)	-.045 (0.44)	-.006 (0.06)	-.022 (0.21)
Hispanic*Western	-.076 (0.72)	-.004 (0.04)	-.014 (0.12)	-.022 (0.19)	.030 (0.26)	.003 (0.03)
Female-Owned*Western	-.062 (0.75)	-.055 (0.65)	-.060 (0.72)	-.057 (0.67)	-.090 (1.25)	-.088 (1.25)
Western region	.051 (0.43)	.096 (2.16)	.079 (1.75)	.044 (0.53)	.057 (0.717)	.047 (0.60)
Dun & Bradstreet credit ratings (4)	No	Yes	Yes	Yes	Yes	Yes
Other firm characteristics	No	No	Yes	Yes	Yes	Yes
Characteristics of the loan	No	No	No	No	No	Yes
Region (9)	No	No	No	Yes	Yes	Yes
Industry (37)	No	No	No	No	Yes	Yes
N	927	927	927	927	927	927
Pseudo R <sup>2</sup>	.0622	.2052	.2399	.2552	.3093	.3201
Chi <sup>2</sup>	73.13	216.3	252.9	268.99	326.0	337.4

Notes: t-statistics in parentheses.

Source: Authors' calculations from 1998 SSBF.

## Statistical Disparities in Capital Markets

**Table 6.19. More Loan Denial Probabilities**

	(1)	(2)	(3)	(4)
	<i>Denylast</i>	<i>Denylast</i>	<i>Denylast</i>	<i>Denylast</i>
Black	.449 (7.91)	.187 (4.97)	.480 (7.75)	.205 (5.15)
Asians	.155 (2.48)	.064 (2.06)	.067 (0.80)	.058 (1.46)
Hispanic	.399 (6.10)	.188 (4.61)	.422 (4.83)	.162 (3.36)
White Female	.099 (2.52)	.035 (1.98)	.116 (2.46)	.053 (2.56)
Woman 50/50		.071 (1.76)		.012 (0.44)
Black*Western			-.074 (0.71)	-.028 (1.43)
Asians*Western			.117 (0.94)	-.003 (0.10)
Hispanic*Western			-.053 (0.62)	.009 (0.26)
Female-Owned*Western			-.046 (0.64)	-.025 (1.74)
Western region			.073 (1.74)	.026 (0.88)
Dun & Bradstreet credit ratings (4)	No	Yes	No	Yes
Other firm characteristics	No	Yes	No	Yes
Characteristics of the loan	No	Yes	No	Yes
Region (9)	No	Yes	No	Yes
Industry (37)	No	Yes	No	Yes
N	849	879	849	879
Pseudo R <sup>2</sup>	.1077	.4061	.1151	.4108
Chi2	88.21	345.0	94.26	349.9

Source: Authors' calculations from 1998 SSBF.

## Statistical Disparities in Capital Markets

**Table 6.20. Models of Interest Rate Charged**

Specification	Black	Black* Western Region	Black* Construc- tion	Hispanic	White Women
1a) All Loans (as in column 5 of Table 6.17) n=768	1.009 (2.49)	-	-	-.145 (0.32)	-.316 (1.25)
1b) All Loans (as in column 5 of Table 6.17) n=768	.867 (2.06)	1.043 (0.94)	.143 (0.25)	.648 (1.90)	-.322 (1.25)
1c) Western region All Loans (as in column 5 of Table 6.17) n=202	2.924 (2.25)	-	-	.170 (0.21)	-.350 (0.65)

Notes: Each line of this table represents a separate regression with all of the control variables. Controls for fixed interest rate or amount of points paid were not significant and hence excluded. The sample consists of firms who had applied for a loan and had their application approved.

Source: Authors' calculations from 1998 SSBF.

## Statistical Disparities in Capital Markets

**Table 6.21. Racial Differences in Failing to Apply for Loans Fearing Denial**

Specification	Black	Hispanic	White Women
<b>a) U.S.</b>			
No Other Control Variables (n=3,457)	.352 (11.87)	.141 (4.25)	.071 (7.97)
Full Set of Control Variables (as in column 5 of Table 6.17) (n=3,457)	.227 (7.51)	.042 (1.38)	.042 (2.12)
<b>b) Western region</b>			
No Other Control Variables (n=945)	.345 (4.48)	.168 (3.09)	.105 (2.75)
Dun & Bradstreet Credit Reports (n=945)	.314 (4.11)	.3124 (2.35)	.110 (2.87)
<b>c) Construction</b>			
No Other Control Variables (n=354)	.346 (3.48)	.014 (0.12)	.098 (1.21)
Dun & Bradstreet Credit Ratings (n=468)	.313 (3.17)	-.046 (0.41)	.094 (1.17)

Notes: Equations also include controls for Asian, Native American and Other Races. Reported estimates are Probit derivatives with t-statistics in parentheses.

Source: Authors' calculations from 1998 SSBF.

## Statistical Disparities in Capital Markets

**Table 6.22. Models of Credit Card Use**

Specification	Black	Hispanic	White Women	Sample Size
1) Business Credit Card	-.008 (0.23)	-.027 (0.67)	-.019 (0.78)	3,457
2) Personal Credit Card	-.006 (0.18)	-.064 (1.66)	.005 (0.22)	3,457
3) Business Credit Card Western region	-.063 (0.73)	-.083 (1.27)	-.088 (1.83)	939
4) Personal Credit Card Western region	-.079 (0.93)	-.034 (0.54)	.005 (0.10)	937

Notes: Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.17. The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. In all specifications, the sample size is all firms. Reported estimates are Probit derivatives with t-statistics in parentheses.

Source: Authors' calculations from 1998 NSSBF.

## Statistical Disparities in Capital Markets

**Table 6.23. Loan / Credit Denial Statistics by Race/Sex – Denver Area Geographic Market**

	<b>White men</b>	<b>Black</b>	<b>Hispanics</b>	<b>White Women</b>	<b>N</b>
% loan / credit applications denied (on most recent credit application)	13.9	85.7	40.0	21.5	301
% loan / credit applications denied in last three years (excluding most recent application)	23.8	71.4	40.7	26.7	301
% loan / credit application in last three years (including most recent credit application)	28.5	75.0	50.0	36.4	306

Source: NERA Denver Area Credit Survey conducted October-November 2005. Minorities include Black, Asian, Hispanic, and Native American-owned firms.

## Statistical Disparities in Capital Markets

**Table 6.24. Selected Sample Means of Loan Applicants – Denver Area**

<b>Sample Characteristic</b>	<b>All</b>	<b>White Males</b>	<b>Blacks</b>	<b>Hispanics</b>	<b>White Women</b>
% owner with judgments against them	4	3	15	6	2
% firm delinquent on business obligations	21	21	38	34	19
% owner delinquent on personal obligations	15	13	54	26	16
% owner declared bankrupt in past 7 years	3	3	8	3	3
Sales (millions of 2005 \$)	1939	2769	290	794	1143
Total full-time equivalent employees	11	16	2	9	5
Total employment	12	17	4	9	7
Firm age, in years	14	16	11	13	13
% sole proprietorship	21	16	23	24	25
% partnership	4	3	8	0	5
% S corporation	47	49	49	54	47
% C corporation	21	25	25	14	15
Sample size (unweighted)	561	305	13	38	173

Note: Employment size counts a part-time employee as equivalent to one-half of a full-time employee. Source: NERA Denver Area Credit Survey.

## Statistical Disparities in Capital Markets

**Table 6.25. Percentage of Firms Reporting Most Important Issues Affecting Them Now**

	All	White Males	Blacks	Hispanics	White Women
Taxes	12	10	0	27	14
Inflation	6	7	8	3	5
Poor Sales	14	13	17	6	17
Cost of labor	5	4	17	0	6
Quality of labor	9	12	8	3	9
Financing and interest rates	8	6	17	12	8
Government regulations/red tape	5	7	8	6	2
Competition from larger firms	15	11	17	24	14
Cost and availability of insurance	17	20	8	9	14
Other	10	10	8	9	11
Number of observations (unweighted)	457	221	12	33	161

Source: NERA Denver Area Credit Survey, 2005.

## Statistical Disparities in Capital Markets

**Table 6.26. Determinants of Loan Denial Rates – Denver Area**

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Most Recent Application</i>			<i>Last Three Years</i>		
Black	.699 (3.52)	.659 (2.79)	.718 (2.89)	.453 (2.49)	.320 (1.53)	.315 (1.47)
Hispanic	.273 (2.79)	.248 (2.46)	.245 (2.30)	.215 (2.13)	.196 (1.84)	.194 (1.71)
Native American	.252 (1.54)	.390 (2.29)	.332 (1.89)	.089 (0.50)	.200 (1.10)	.137 (0.72)
White female	.073 (1.36)	.095 (1.69)	.096 (1.68)	.077 (1.26)	.093 (1.45)	.096 (1.37)
Judgments		.013 (0.11)	.023 (0.18)		.023 (0.16)	-.016 (0.11)
Firm delinquent		.100 (1.53)	.170 (2.32)		.099 (1.32)	.164 (1.94)
Personally delinquent		.180 (2.28)	.125 (1.60)		.269 (2.98)	.244 (2.45)
Bankrupt past 3yrs		.567 (3.25)	.477 (2.70)		.511 (2.57)	.458 (2.12)
Industry indicators	No	No	Yes	No	No	Yes
Organizational status indicators	No	No	Yes	No	No	Yes
N	301	296	288	306	300	292
Pseudo R <sup>2</sup>	.0729	.1987	.274	.0267	.121	.1847
Chi <sup>2</sup>	22.88	60.89	81.5	10.6	47.0	69.3
Log likelihood	-145.6	-122.8	108.0	-192.8	-170.1	-153.0

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. Source: Denver Area Credit Survey, 2005.

## Statistical Disparities in Capital Markets

**Table 6.27. Determinants of Loan Denial Rates – Seven Jurisdictions**

	(1)	(2)	(3)	(4)
	<i>Most Recent Application</i>		<i>Last Three Years</i>	
Black	.306 (7.94)	.281 (7.12)	.388 (8.72)	.382 (8.33)
Hispanic	.196 (4.01)	.178 (3.16)	.264 (4.59)	.266 (4.02)
Native American	.142 (2.01)	.074 (0.96)	.140 (1.66)	.110 (1.16)
Asian	.114 (2.17)	.102 (1.95)	.185 (3.10)	.182 (3.03)
Other race	.246 (2.24)	.263 (2.37)	.305 (2.35)	.309 (2.37)
White female	.055 (2.01)	.039 (1.22)	.098 (2.91)	.090 (2.31)
Black*Denver		.364 (1.52)		.115 (0.42)
Hispanic*Denver		.056 (0.58)		-.009 (0.08)
Native American*Denver		.294 (1.59)		.133 (0.66)
White female*Denver		.066 (1.03)		.028 (0.38)
Judgments	.061 (1.56)	.062 (1.59)	.148 (2.47)	.149 (2.48)
Firm delinquent	.069 (2.76)	.070 (2.78)	.145 (4.59)	.146 (4.61)
Personally delinquent	.218 (6.60)	.221 (6.63)	.299 (7.22)	.299 (7.22)
Bankrupt past 3yrs	.300 (4.87)	.300 (4.87)	.495 (5.83)	.495 (5.82)
N	1637	1637	1645	1645
Pseudo R <sup>2</sup>	.1699	.1730	.1805	.1808
Chi <sup>2</sup>	276.8	281.9	380.9	381.6
Log likelihood	-76.0	-673.5	-864.5	-864.2

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. Five additional indicator variables are also included for other jurisdictions. Source: NERA Credit Market Surveys, 1999-2005.

## Statistical Disparities in Capital Markets

**Table 6.28. Models of Credit Card Use – Denver Area Geographic Market**

Specification	Blacks	Hispanics	White females	Sample Size
A) No Control Variables				
1) Business Credit Card	-.029 (0.21)	.077 (0.92)	.127 (2.65)	483
2) Personal Credit Card	.309 (2.10)	.123 (1.38)	.08 (1.78)	479
B) Controls Variables as in Columns 2 and 4 of Table 6.18				
3) Business Credit Card	-.010 (0.07)	.104 (1.19)	.145 (3.00)	471
4) Personal Credit Card	.240 (1.55)	.138 (1.45)	.084 (1.66)	107

Notes: Reported estimates are Probit derivatives, t-statistics in parentheses. Source: Denver Area Credit Survey.

## Statistical Disparities in Capital Markets

**Table 6.29. Determinants of Interest rates – Seven Jurisdictions**

	(1)	(2)	(3)	(4)
Black	1.053 (2.95)	1.000 (2.74)	.767 (2.10)	.714 (1.92)
Hispanic	.819 (1.92)	.762 (1.54)	.662 (1.53)	.555 (1.10)
Native American	.309 (0.50)	.295 (0.44)	.313 (0.51)	.262 (0.39)
Asian	.908 (2.14)	.875 (2.05)	.983 (2.31)	.948 (2.21)
Other race	-.2917 (0.28)	-.265 (0.25)	-.623 (0.60)	-.597 (0.58)
White female	.238 (0.96)	.133 (0.47)	.247 (1.00)	.153 (0.54)
Black*Denver		.927 (0.38)		.865 (0.35)
Hispanic*Denver		.238 (0.24)		.416 (0.43)
Native American*Denver		.013 (0.01)		.255 (0.15)
White female*Denver		.431 (0.76)		.384 (0.67)
Judgments			1.276 (2.55)	1.296 (2.59)
Firm delinquent			.000 (0.00)	.0085 (0.03)
Personally delinquent			1.127 (3.20)	1.118 (3.17)
Bankrupt past 3yrs			1.362 (2.02)	1.358 (2.01)
N	1274	1274	1253	1253
Adjusted R <sup>2</sup>	.0824	.0800	.1012	.0987
Chi <sup>2</sup>	10.5	7.9	9.81	7.87

Notes: Reported estimates are OLS regression models, T-statistics are in parentheses. Source: Seven NERA Credit Surveys. Five additional indicator variables are also included for other jurisdictions.

## Statistical Disparities in Capital Markets

**Table 6.30. Models of Loan Denials in the Denver Market Area– Checking for Non-response Bias**

	(1)	(2)	(3)	(4)
Minority	.2859 (3.55)	.3054 (3.88)	.299 (3.65)	.3164 (3.95)
Woman	.0514 (1.05)	.0656 (1.44)	.0686 (1.38)	.0800 (1.74)
Bankrupt			.6603 (4.26)	.6756 (4.40)
Non-response data included	No	Yes	No	Yes
N	301	328	300	327
Pseudo R <sup>2</sup>	.0407	.0485	.1163	.1265
Chi <sup>2</sup>	12.78	15.83	36.18	40.92
Likelihood ratio	-150.7	-155.4	-137.4	-141.2

Notes: The dependent variable indicates a loan has ever been denied. Estimates are Probit derivatives, t-statistics in parentheses.

Source: Authors' calculations from the 2005 Denver Area Credit Market Survey and the 2005 Denver Area Credit Market Non-Response Survey.

### VII. M/W/DBE Utilization and Disparity in Denver's Contracting Markets

#### A. Introduction

The *Croson* decision and its progeny have held that statistical evidence of race- or gender-based disparities in business enterprise activity is a requirement for any state or local entity that desires to establish or maintain race- or gender-conscious requirements for M/W/DBE participation in contracting and procurement. Chapters V and VI documented the extent of disparity facing minority- and women- owned firms in the private sector of the Denver area economy, where contracting and procurement activity is generally *not* subject to M/W/DBE requirements. In this Chapter, we examine whether there is statistical evidence of disparity in the contracting and procurement activities of the City and County of Denver itself.

To determine whether M/W/DBEs have been underutilized in the public sector we should ideally examine public expenditures that were *not* subject to affirmative action requirements. However, Denver pursued a variety of contracting affirmative action policies between 1983 and March 1, 2000.<sup>207</sup> Since that time, the City has instead implemented a contracting affirmative action program for Small Business Enterprises. As we shall see in this Chapter, while the Small Business Enterprise (SBE) Program is facially race- and gender-neutral, it has been utilized mostly by M/W/DBEs. This is because the certification standards for the SBE Program and the enjoined M/WBE Program were very similar, except for the race and gender identification and the graduation standards. The originally certified M/WBEs were therefore “grandfathered” into the SBE Program at the time of its enactment, as an administrative convenience.

Given the history of Denver's M/W/DBE policies and the practical effect of the City's current SBE Program, Denver's own data may not show much evidence of underutilization, even if such underutilization exists in the private sector. Instead, Denver's data are most useful for examining the effectiveness of Denver's M/W/DBE policies prior to March 2000 and its subsequent SBE policy. On the other hand, of course, if actual Denver M/W/DBE utilization still turns out to be significantly less than M/W/DBE availability in certain industry categories, then Denver's data will still provide evidence of underutilization. The statistical evidence reported in Chapter III has already established the following:

- What Denver spends its Construction and Construction-Related Professional Services dollars on.
- Where Denver spends its Construction and Construction-Related Professional Services dollars.

Furthermore, the statistical evidence reported in Chapter IV has established:

- What percentage of all firms in Denver's geographic and product markets are M/W/DBEs.

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<sup>207</sup> Denver's 1998 M/WBE Ordinance was enjoined by the federal court in *Concrete Works III* at that time.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

This Chapter will document:

- Denver's utilization of M/W/DBEs in its Construction and Construction-Related Professional Services contracting and subcontracting opportunities from 2000 to 2005.
- Whether M/W/DBEs have been utilized to the extent that they are available in the relevant marketplace.

We report this information for Construction and for Construction-Related Professional Services. Where the data allow, results are reported by race and sex as well. The two contract categories reflect differences in contract award, contract administration, and contract reporting procedures in each area. For example, Professional Services contracts are often obtained through Requests for Proposals (RFPs) and similar methods where price is usually only one factor, if at all, in consideration for award. In contrast, Construction contracts are typically obtained through competitive sealed bidding and similar methods where price is usually the determining factor among responsive and responsible bidders.<sup>208</sup>

### B. M/W/DBE Utilization

For this Study, we examined 3,241 distinct prime contracts and subcontracts covering a five-year time period and with a total value of \$1.68 billion. We found that during this time, as a group, M/W/DBEs earned 12.9 percent of all Denver contract and subcontract dollars in Construction (\$185.1 million) and 25.4 percent of all contract and subcontract dollars in Professional Services (\$60.8 million). For both contracting categories combined, M/W/DBEs earned 14.7 percent of all dollars spent during the study period (\$245.9 million).

Of 402 prime contracts examined in Construction, 61, or 15.2 percent, were awarded to M/W/DBEs. The average prime contract size for Non-M/W/DBE firms was \$4.1 million. The average prime contract size for M/W/DBE firms was \$705,000. Of 2,266 subcontracts examined in Construction, 822, or 36.3 percent, were awarded to M/W/DBEs. The average subcontract size for Non-M/W/DBE firms was \$184,500. The average subcontract size for M/W/DBE firms was \$185,100.

Of 141 prime contracts examined in Professional Services, 14, or 9.9 percent, were awarded to M/W/DBEs. The average prime contract size for Non-M/W/DBE firms was \$1.8 million. The average prime contract size for M/W/DBE firms was \$1.1 million. Of 428 subcontracts examined in Professional Services, 261, or 61.0 percent, were awarded to M/W/DBEs. The average subcontract size for Non-M/W/DBE firms was \$63,900. The average subcontract size for M/W/DBE firms was \$185,800.

Table 7.1 details the key results of our analysis of M/W/DBE participation in Denver for each race, ethnic, and gender group under study and for both major procurement categories. For minority-owned M/W/DBEs (*i.e.*, M/W/DBEs other than White women), utilization was 8.8

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<sup>208</sup> While during 2002 Denver authorized the procurement of construction projects using the Construction Manager at Risk or the Design-Build methods, whereby price is negotiated, these methods have been used primarily on select projects and have not supplanted the competitive sealed bid process.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

percent in Construction and 18.2 percent in Professional Services. Hispanic-owned firms accounted for more than 60 percent of MBE utilization, followed by Black-owned firms with about 25 percent of all MBE utilization. For White women-owned firms, utilization was 4.1 percent in Construction and 7.3 percent in Professional Services.

Table 7.2 presents M/W/DBE utilization estimates for the DIA compared to all other City and County Divisions. Utilization by DIA of M/W/DBEs in Construction was substantially lower than utilization of M/W/DBEs by other Denver divisions during the study period. The opposite is true in Professional Services, however, where M/W/DBE utilization at DIA was much higher than at other Denver divisions.

Tables 7.4 through 7.8 present detailed M/W/DBE utilization data comparable to that presented above in Tables 7.1 and 7.2 for each detailed two-digit SIC (Major Group), three-digit SIC (Industry Group), and four-digit SIC (Industry) category in Denver's relevant market area.

### C. Disparity Analysis

We turn to a comparison between our estimates of M/W/DBE utilization in Denver's own contracting and subcontracting and our estimates of M/W/DBE availability in Denver's geographic and product market area.

Table 7.9 presents the results of this comparison for Denver Construction and Professional Services contracting as a whole. The figures in the utilization column are the same as those from Table 7.1 and include both prime contract and subcontract dollars. The Construction figures in the availability column are the same as those in the last row of Table 4.11. The Professional Services figures in the availability column are the same as those in the last row of Table 4.12.

The disparity index, in the final column, is derived by dividing utilization by availability and multiplying the result by 100. A disparity index below 100 indicates that M/W/DBEs are participating in Denver contracting and subcontracting at a level that is less than their estimated availability in the relevant marketplace.

For Construction taken as a whole, statistically significant adverse disparities are observed for Asian-owned firms, Native American-owned firms, White women-owned firms, and for the M/W/DBE group as a whole. In Professional Services, statistically significant adverse disparities are observed for Native American-owned firms and White women-owned firms.

Table 7.10 presents comparable disparity results at the two-digit SIC (Major Group) level of industry disaggregation. Table 7.11 presents the corresponding data for Professional Services.<sup>209</sup> Statistically significant adverse disparities are observed in both Construction and in Professional Services and among all M/W/DBE types—Black-owned, Hispanic-owned, Asian-owned, Native American-owned, and White women-owned. There are also categories, however, where M/W/DBEs appear to be participating in Denver city and county contracting at levels that are not statistically significantly below currently estimated availability levels. Caution is warranted in the interpretation of these results, however. On the one hand, they show that some M/W/DBE

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<sup>209</sup> Comparable tests, not reported here, were also carried out at the three-digit and four-digit SIC level.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

firms have been able to continue working on Denver contracts and subcontracts since March, 2000 either by (a) building on the ground work that has been laid previously for M/W/DBEs by virtue of the federal government's DBE Program and the City and County of Denver's race-conscious and gender-conscious contracting policies between 1983 and March, 2000,<sup>210</sup> (b) being in a position to take best advantage of Denver's SBE program that went into effect after March, 2000, or (c) both.

However, recalling the discussion of potential availability in Chapter V, we know that absent the discriminatory private sector marketplace in Colorado and in Denver that was documented in that Chapter, availability levels for most if not all types of M/W/DBE firms would be significantly higher than current levels. Therefore, any apparent lack of disparity in a given major industry group is likely more apparent than real.

Moreover, M/W/DBE utilization on Denver's construction contracts and subcontracts has trended strongly downward during the study period, suggesting that the early results achieved through SBE subcontracting goals are not a reliable guide to future outcomes. Denver's M/W/DBE utilization in construction peaked in 2002 at 17.2 percent (of which 10.8 percent was earned by minority-owned firms and 6.4 percent by White female-owned firms). For 2003 this figure declined to 11.5 percent (of which 8.1 percent was to minority firms and 3.4 percent to White female firms). By 2004, the figure had declined to 8.6 percent (of which 6.9 percent was to minority firms and 1.7 percent to White female firms).

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<sup>210</sup> According to Denver's 1990 Disparity Study (Harding & Ogborn, et al., 1990, pp. II-10, II-13), M/WBE participation in Department of Public Works contracts averaged almost 28 percent in Construction and almost 36 percent in Professional Services during the first five years of contracting affirmative action in Denver (1984-1988). Comparable data for other city departments or for the 1990-1999 time period are not available.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

### D. Tables

**Table 7.1. M/W/DBE Utilization on Denver's Prime Contracts and Subcontracts, 2000-2005**

M/W/DBE Type	Procurement Category	
	Construction (%)	Professional Services (%)
Black	2.10	5.64
Hispanic	5.62	10.50
Asian	0.67	1.86
Native American	0.37	0.15
Minority-Owned	8.76	18.15
White women-Owned	4.09	7.26
M/W/DBE Total	12.86	25.41
Non-M/W/DBE Total	87.14	74.59
SBE Total	18.23	19.02
Non-SBE Total	81.77	80.98
Total (%)	100.00	100.00
Total (\$)	\$1,439,914,142	\$239,158,604

Source: NERA Master Contract/Subcontract Database for Denver, 2000-2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Table 7.2. M/W/DBE Utilization on Prime Contracts and Subcontracts, DIA and Other Denver Divisions

M/W/DBE Type	Procurement Category	
	Construction (%)	Professional Services (%)
<i>Denver International Airport</i>		
Black	0.46	8.17
Hispanic	4.34	14.39
Asian	0.59	1.86
Native American	0.82	0.00
Minority-Owned	6.22	24.42
White women-Owned	2.71	9.27
M/W/DBE Total	8.93	33.69
Non-M/W/DBE Total	91.07	66.31
SBE Total	10.89	22.74
Non-SBE Total	89.11	77.26
Total (%)	100.00	100.00
Total (\$)	\$545,194,673	\$147,691,434
<i>All Other City and County Divisions</i>		
Black	3.10	1.56
Hispanic	6.40	4.21
Asian	0.72	1.86
Native American	0.10	0.38
Minority-Owned	10.32	8.02
White women-Owned	4.93	4.02
M/W/DBE Total	15.25	12.04
Non-M/W/DBE Total	84.75	87.96
SBE Total	22.70	13.02
Non-SBE Total	77.30	86.98
Total (%)	100.00	100.00
Total (\$)	\$894,719,470	\$91,467,169

Source: NERA Master Contract/Subcontract Database for Denver, 2000-2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.3. Construction—Detailed M/W/DBE Utilization by Major Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	SBE
General building contractors (SIC 15)	2.63	0.75	0.00	0.12	0.75	4.24	95.76	6.12
Heavy construction, except building	0.06	5.54	1.09	1.40	1.95	10.05	89.95	14.42
Special trade contractors (SIC 17)	2.70	8.03	1.09	0.01	12.00	23.83	76.17	38.27
Engineering and management services (SIC 87)	2.39	4.07	6.53	0.00	2.22	15.22	84.78	16.51
Wholesale trade--durable goods (SIC 50)	5.99	48.16	0.00	0.00	15.10	69.25	30.75	78.91
Stone, clay, glass, and concrete product (SIC 32)	0.00	2.22	0.00	0.00	4.23	6.46	93.54	6.46
Electric, gas, and sanitary services (SIC 49)	0.05	0.00	0.00	0.00	0.86	0.91	99.09	1.14
Fabricated metal products (SIC 34)	0.00	23.90	0.00	0.00	3.35	27.26	72.74	24.38
Trucking and warehousing (SIC 42)	6.03	44.08	0.00	0.00	20.09	70.20	29.80	70.69
Agricultural services (SIC 07)	0.68	13.59	0.00	0.00	4.34	18.61	81.39	61.33
Nonmetallic minerals, except fuels (SIC 14)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Miscellaneous manufacturing industries (SIC 33)	0.00	0.00	0.00	0.00	23.33	23.33	76.67	27.67
Business services (SIC 73)	3.45	35.38	0.00	0.00	6.66	45.49	54.51	48.60
<i>CONSTRUCTION</i>	<i>2.10</i>	<i>5.62</i>	<i>0.67</i>	<i>0.37</i>	<i>4.09</i>	<i>12.86</i>	<i>87.14</i>	<i>18.23</i>

Source: NERA Master Contract/Subcontract Database for Denver, 2000-2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.4. Professional Services—Detailed M/W/DBE Utilization by Major Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	SBE
Engineering and management services (SIC 87)	5.84	10.11	2.01	0.00	6.12	24.09	75.91	16.16
Agricultural services (SIC 07)	0.00	0.00	0.00	0.00	54.76	54.76	45.24	61.75
Special trade contractors (SIC 17)	1.42	13.45	0.00	0.00	0.89	15.77	84.23	49.83
Wholesale trade--durable goods (SIC 50)	0.00	10.26	0.00	0.00	2.11	12.37	87.63	12.37
Trucking and warehousing (SIC 42)	18.71	56.69	0.00	0.00	4.79	80.19	19.81	74.45
General building contractors (SIC 15)	24.15	24.20	0.00	0.00	41.06	89.41	10.59	89.41
Heavy construction, except building	0.00	1.72	0.00	44.14	0.00	45.86	54.14	44.14
Miscellaneous manufacturing industries (SIC	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
<i>PROFESSIONAL SERVICES</i>	<i>5.64</i>	<i>10.50</i>	<i>1.86</i>	<i>0.31</i>	<i>7.26</i>	<i>25.41</i>	<i>74.59</i>	<i>19.02</i>

Source: NERA Master Contract/Subcontract Database for Denver, 2000-2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.5. Construction—Detailed M/W/DBE Utilization by Industry Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	SBE
General Bldg Contractors – Comm. (SIC 154)	2.63	0.75	0.00	0.12	0.75	4.24	95.76	6.12
Highway and Street Construction (SIC 153)	0.08	3.42	1.47	0.00	1.99	6.97	93.03	5.81
Other Heavy Construction (SIC 162)	0.00	11.54	0.00	5.37	1.84	18.75	81.25	38.76
Electrical Work (SIC 173)	0.27	11.22	2.81	0.03	13.66	27.99	72.01	32.12
Concrete Work (SIC 177)	0.00	5.87	0.00	0.00	1.19	7.05	92.95	34.44
Misc. Special Trades (SIC 179)	5.35	4.45	0.00	0.00	22.52	32.31	67.69	49.86
Plumbing, Heating & AC (SIC 171)	9.22	12.15	0.39	0.00	9.01	30.77	69.23	41.79
Engineering & Architect. Services (SIC 172)	1.28	4.02	6.99	0.00	2.38	14.66	85.34	16.05
Masonry & Stone Setting (SIC 174)	3.65	14.83	2.23	0.00	2.00	22.71	77.29	45.48
Electrical Goods (SIC 506)	5.33	74.67	0.00	0.00	15.66	95.65	4.35	95.64
Concrete, Gypsum & Plaster (SIC 327)	0.00	2.22	0.00	0.00	4.23	6.46	93.54	6.46
Metals & Minerals, exc. Petroleum (SIC 33)	0.81	67.28	0.00	0.00	14.09	82.18	17.82	82.18
Sanitary Services (SIC 495)	0.05	0.00	0.00	0.00	0.86	0.91	99.09	1.14
Roofing, Siding and Sheet Metal (SIC 176)	0.00	1.89	0.00	0.00	51.82	53.71	46.29	55.98
Lumber & Other Const. Materials (SIC 503)	14.46	20.97	0.00	0.00	4.97	40.40	59.60	58.48
Fabricated Structural Metal Products (SIC 33)	0.00	23.90	0.00	0.00	3.35	27.26	72.74	24.38

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	SBE
Water Well Drilling (SIC 178)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Trucking & Courier Services (SIC 421)	6.03	44.08	0.00	0.00	20.09	70.20	29.80	70.69
Carpentry and Floor Work (SIC 175)	0.00	0.52	0.00	0.00	0.72	1.24	98.76	38.86
Landscape and Horticultural Services (SIC 144)	0.68	13.59	0.00	0.00	4.34	18.61	81.39	61.33
Sand and Gravel (SIC 144)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Painting and Paper Hanging (SIC 172)	0.00	2.30	9.61	0.00	2.30	14.21	85.79	25.91
Miscellaneous Manufacturing (SIC 399)	0.00	0.00	0.00	0.00	22.50	22.50	77.50	27.97
Management Services (SIC 874)	21.61	5.85	0.00	0.00	0.00	27.45	72.55	27.45
Hardware & Plumbing Eqpmt & Supplies (SIC 735)	0.00	0.00	0.00	0.00	86.98	86.98	13.02	91.28
Misc. Eqpmt Rental & Leasing (SIC 735)	0.00	44.38	0.00	0.00	8.36	52.73	47.27	46.98
<i>CONSTRUCTION</i>	<i>2.10</i>	<i>5.62</i>	<i>0.67</i>	<i>0.37</i>	<i>4.09</i>	<i>12.86</i>	<i>87.14</i>	<i>18.23</i>

Source: NERA Master Contract/Subcontract Database for Denver, 2000-2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.6. Professional Services—Detailed M/W/DBE Utilization by Industry Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	SBE
Engineering & Architect. Services (SIC Management Services (SIC 874)	6.73	11.29	2.32	0.00	7.04	27.37	72.63	18.25
Landscape and Horticultural Services (SIC Misc. Special Trades (SIC 179)	0.00	0.00	0.00	0.00	0.03	0.03	99.97	0.03
Electrical Goods (SIC 506)	0.00	0.00	0.00	0.00	54.76	54.76	45.24	61.75
Electrical Work (SIC 173)	0.00	22.75	0.00	0.00	0.00	22.75	77.25	22.74
Trucking & Courier Services (SIC 421)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Research and Testing Services (SIC 873)	0.00	0.71	0.00	0.00	0.00	0.71	99.29	91.91
General Bldg Contractors – Comm. (SIC 154)	18.71	56.69	0.00	0.00	4.79	80.19	19.81	74.45
Other Heavy Construction (SIC 162)	0.00	57.42	0.00	0.00	0.00	57.42	42.58	57.42
Miscellaneous Manufacturing (SIC 399)	24.15	24.20	0.00	0.00	41.06	89.41	10.59	89.41
<i>PROFESSIONAL SERVICES</i>	0.00	1.72	0.00	44.14	0.00	45.86	54.14	44.14
	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
	<i>5.64</i>	<i>10.50</i>	<i>1.86</i>	<i>0.31</i>	<i>7.26</i>	<i>25.41</i>	<i>74.59</i>	<i>19.02</i>

Source: NERA Master Contract/Subcontract Database for Denver, 2000-2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.7. Construction—Detailed M/W/DBE Utilization by Detailed Industry Group (Percentages)**

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	SBE
Nonresidential Construction, n.e.c. (SIC 1542)	2.64	0.62	0.00	0.00	0.74	4.00	96.00	5.60
Highway and Street Construction (SIC 1543)	0.08	3.42	1.47	0.00	1.99	6.97	93.03	5.81
Electrical Work (SIC 1731)	0.27	11.22	2.81	0.03	13.66	27.99	72.01	32.12
Concrete Work (SIC 1771)	0.00	5.87	0.00	0.00	1.19	7.05	92.95	34.44
Plumbing, Heating, and Air Conditioning (SIC 1772)	9.22	12.15	0.39	0.00	9.01	30.77	69.23	41.79
Engineering Services (SIC 8711)	1.55	4.62	1.86	0.00	0.30	8.33	91.67	8.86
Bridge, Tunnel, and Elevated Highway (SIC 1621)	0.00	25.71	0.00	0.00	0.00	25.71	74.29	25.71
Water, Sewer, and Utility Lines (SIC 1623)	0.00	5.97	0.00	0.00	0.83	6.80	93.20	31.27
Heavy Construction, n.e.c. (SIC 1629)	0.00	0.00	0.00	18.13	5.29	23.41	76.59	63.55
Special Trade Contractors, n.e.c. (SIC 1799)	12.81	5.79	0.00	0.00	0.77	19.37	80.63	43.31
Electrical Apparatus and Equipment, Excavation Work (SIC 1794)	0.00	83.54	0.00	0.00	11.80	95.33	4.67	95.32
Metals Service Centers and Offices (SIC 3329)	0.00	8.18	0.00	0.00	46.03	54.20	45.80	53.26
Refuse Systems (SIC 4953)	0.81	67.28	0.00	0.00	14.09	82.18	17.82	82.18
Roofing, Siding, and Sheet Metal Work (SIC 1761)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.24
Fabricated Structural Metal (SIC 3441)	0.00	1.89	0.00	0.00	51.82	53.71	46.29	55.98
	0.00	26.51	0.00	0.00	0.00	26.51	73.49	26.47

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	SBE
Structural Steel Erection (SIC 1791)	0.00	0.00	0.00	0.00	49.74	49.74	50.26	84.24
Plastering, Dry Wall, and Insulation (SIC 1781)	0.66	15.14	4.04	0.00	0.00	19.85	80.15	61.08
Water Well Drilling (SIC 1781)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Ready-Mixed Concrete (SIC 3273)	0.00	3.09	0.00	0.00	7.60	10.69	89.31	10.69
Brick, Stone, and Related Construction	0.00	39.41	0.00	0.00	2.91	42.33	57.67	56.17
Lawn and Garden Services (SIC 0782)	0.83	10.54	0.00	0.00	5.31	16.68	83.32	68.91
Local Trucking Without Storage (SIC 4212)	7.71	30.95	0.00	0.00	25.69	64.36	35.64	64.98
Construction Sand and Gravel (SIC 1442)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Concrete Products, n.e.c. (SIC 3272)	0.00	1.13	0.00	0.00	0.00	1.13	98.87	1.13
Masonry and Other Stonework (SIC 1741)	10.15	19.99	0.00	0.00	4.81	34.95	65.05	34.95
Architectural Services (SIC 8712)	0.00	0.11	50.45	0.00	11.56	62.12	37.88	72.15
Industrial Buildings and Warehouses (SIC 1795)	0.00	21.48	0.00	20.13	1.54	43.15	56.85	90.50
Wrecking and Demolition Work (SIC 1795)	0.00	0.00	0.00	0.00	1.16	1.16	98.84	31.25
Floor Laying and Floor Work, n.e.c. (SIC 1752)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Painting (SIC 1721)	0.00	2.30	9.61	0.00	2.30	14.21	85.79	25.91
Carpentry Work (SIC 1751)	0.00	1.11	0.00	0.00	1.53	2.65	97.35	83.30
Signs and Advertising Displays (SIC 1721)	0.00	0.00	0.00	0.00	22.50	22.50	77.50	27.97

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Major Group	Black	Hispanic	Asian	Native American	White Female	M/W/DBE	Non-M/W/DBE	SBE
Construction Materials, n.e.c. (SIC 5039)	59.06	0.00	0.00	0.00	0.00	59.06	40.94	99.98
Surveying Services (SIC 8713)	0.00	2.87	0.00	0.00	13.17	16.04	83.96	13.94
Glass and Glazing Work (SIC 1793)	0.00	0.00	0.00	0.00	3.92	3.92	96.08	0.00
Management Services (SIC 8741)	22.95	0.00	0.00	0.00	0.00	22.95	77.05	22.95
Terrazzo, Tile, Marble, and Mosaic Work	0.00	0.10	0.00	0.00	3.62	3.72	96.28	3.72
Plumbing and Heating Equipment and	0.00	0.00	0.00	0.00	95.80	95.80	4.20	95.80
Equipment Rental and Leasing, n.e.c. (SIC 7359)	0.00	59.49	0.00	0.00	7.71	67.20	32.80	59.49
Trucking, Except Local (SIC 4213)	0.00	91.14	0.00	0.00	0.00	91.14	8.86	91.14
Lumber, Plywood, Millwork, and Wood Panels (SIC	0.00	0.00	0.00	0.00	23.41	23.41	76.59	28.23
<i>CONSTRUCTION</i>	<i>2.10</i>	<i>5.62</i>	<i>0.67</i>	<i>0.37</i>	<i>4.09</i>	<i>12.86</i>	<i>87.14</i>	<i>18.23</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.8. Professional Services—Detailed M/W/DBE Utilization by Detailed Industry (Percentages)**

Major Group	Black	Hispanic	Asian	Native Amer- ican	White Female	M/W/DBE	Non- M/W/DBE	SBE
Engineering Services (SIC 8711)	8.44	14.27	1.29	0.00	3.33	27.33	72.67	19.68
Architectural Services (SIC 8712)	1.71	1.92	5.41	0.00	17.86	26.90	73.10	13.25
Management Services (SIC 8741)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Landscape Counseling and Planning (SIC 0781)	0.00	0.00	0.00	0.00	62.45	62.45	37.55	70.42
Special Trade Contractors, n.e.c. (SIC 1799)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Electronic Parts and Equipment, n.e.c. (SIC 5065)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Electrical Work (SIC 1731)	0.00	0.71	0.00	0.00	0.00	0.71	99.29	91.91
Local Trucking Without Storage (SIC 4212)	26.12	67.19	0.00	0.00	6.69	100.00	0.00	91.99
Testing Laboratories (SIC 8734)	0.00	57.42	0.00	0.00	0.00	57.42	42.58	57.42
Nonresidential Construction, n.e.c. (SIC 1542)	24.15	24.20	0.00	0.00	41.06	89.41	10.59	89.41
Heavy Construction, n.e.c. (SIC 1629)	0.00	0.00	0.00	45.19	0.00	45.19	54.81	45.19
Excavation Work (SIC 1794)	0.00	97.73	0.00	0.00	0.00	97.73	2.27	97.69
Lawn and Garden Services (SIC 0782)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Signs and Advertising Displays (SIC 3993)	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
Surveying Services (SIC 8713)	0.00	46.13	0.00	0.00	25.12	71.26	28.74	71.26
<i>PROFESSIONAL SERVICES</i>	<i>5.64</i>	<i>10.50</i>	<i>1.86</i>	<i>0.31</i>	<i>7.26</i>	<i>25.41</i>	<i>74.59</i>	<i>19.02</i>

Source: Dun & Bradstreet's *MarketPlace*; M/W/DBE business directory information compiled by NERA; and NERA telephone interviews conducted in October-November 2005.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Table 7.9. Overall Disparity Results for Denver Construction and Professional Services Contracting, 2000-2005

Procurement Category / M/W/DBE Type	Utilization	Availability	Disparity Index	
<b>Construction:</b>				
<b>Black</b>	2.10	1.22	N/A	
<b>Hispanic</b>	5.62	5.55	N/A	
<b>Asian</b>	0.67	1.36	49.4	**
<b>Native American</b>	0.37	0.99	37.6	**
<b>Minority total</b>	8.76	9.12	96.1	
<b>White Female</b>	4.09	12.80	32.0	**
<b>M/W/DBE total</b>	12.86	21.92	58.7	**
<b>Professional Services:</b>				
<b>Black</b>	5.64	0.43	N/A	
<b>Hispanic</b>	10.50	2.62	N/A	
<b>Asian</b>	1.86	1.37	N/A	
<b>Native American</b>	0.15	0.31	48.2	**
<b>Minority total</b>	18.15	4.72	N/A	
<b>White Female</b>	7.26	10.25	70.8	**
<b>M/W/DBE total</b>	25.41	14.97	N/A	

Source: Calculations from NERA Master Contract/Subcontract Database for Denver and NERA Baseline Business Population database for Denver.

Note: “†” indicates an adverse disparity that is statistically significant at the 10% level or better. “\*” indicates the disparity is significant at a 5% level or better. “\*\*” indicates significance at a 1% level or better. “N/A” indicates that no adverse disparity was observed in that category.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.10. Major Group Disparity Results for Denver Construction Contracting, 2000-2005**

Procurement Category / M/W/DBE Type	Utilization	Availability	Disparity Index
<b>BLACK</b>			
General building contractors (SIC 15)	2.63	1.96	
Heavy construction, except building (SIC 16)	0.06	0.52	11.7 **
Special trade contractors (SIC 17)	2.70	0.44	
Engineering and management services (SIC 87)	2.39	0.44	
Wholesale trade--durable goods (SIC 50)	5.99	0.30	
Stone, clay, glass, and concrete product (SIC 32)	0.00	0.00	
Electric, gas, and sanitary services (SIC 49)	0.05	0.28	19.2
Fabricated metal products (SIC 34)	0.00	0.00	
Trucking and warehousing (SIC 42)	6.03	0.67	
Agricultural services (SIC 07)	0.68	0.27	
Nonmetallic minerals, except fuels (SIC 14)	0.00	0.00	
Miscellaneous manufacturing industries (SIC 39)	0.00	0.22	0.0 **
Business services (SIC 73)	3.45	0.19	
<b>HISPANIC</b>			
General building contractors (SIC 15)	0.75	5.54	13.5 **
Heavy construction, except building (SIC 16)	5.54	4.35	
Special trade contractors (SIC 17)	8.03	6.90	
Engineering and management services (SIC 87)	4.07	2.46	
Wholesale trade--durable goods (SIC 50)	48.16	4.19	
Stone, clay, glass, and concrete product (SIC 32)	2.22	3.93	56.5 **
Electric, gas, and sanitary services (SIC 49)	0.00	3.04	0.0
Fabricated metal products (SIC 34)	23.90	4.66	
Trucking and warehousing (SIC 42)	44.08	4.48	
Agricultural services (SIC 07)	13.59	3.71	
Nonmetallic minerals, except fuels (SIC 14)	0.00	6.12	0.0 *
Miscellaneous manufacturing industries (SIC 39)	0.00	3.20	0.0 **
Business services (SIC 73)	35.38	3.13	
<b>ASIAN</b>			
General building contractors (SIC 15)	0.00	0.27	0.0 **
Heavy construction, except building (SIC 16)	1.09	0.36	
Special trade contractors (SIC 17)	1.09	3.50	31.2 **
Engineering and management services (SIC 87)	6.53	1.23	
Wholesale trade--durable goods (SIC 50)	0.00	0.20	0.0 **
Stone, clay, glass, and concrete product (SIC 32)	0.00	0.00	
Electric, gas, and sanitary services (SIC 49)	0.00	0.50	0.0
Fabricated metal products (SIC 34)	0.00	0.00	
Trucking and warehousing (SIC 42)	0.00	0.14	0.0 **
Agricultural services (SIC 07)	0.00	0.08	0.0 **
Nonmetallic minerals, except fuels (SIC 14)	0.00	0.82	0.0 *
Miscellaneous manufacturing industries (SIC 39)	0.00	0.06	0.0 **
Business services (SIC 73)	0.00	0.11	0.0 **

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Procurement Category / M/W/DBE Type	Utilization	Availability	Disparity Index
<b>NATIVE AMERICAN</b>			
General building contractors (SIC 15)	0.12	0.61	20.4 **
Heavy construction, except building (SIC 16)	1.40	0.66	
Special trade contractors (SIC 17)	0.01	1.98	0.4 **
Engineering and management services (SIC 87)	0.00	0.31	0.0 **
Wholesale trade--durable goods (SIC 50)	0.00	0.23	0.0 **
Stone, clay, glass, and concrete product (SIC 32)	0.00	0.18	0.0 **
Electric, gas, and sanitary services (SIC 49)	0.00	0.28	0.0
Fabricated metal products (SIC 34)	0.00	0.09	0.0 **
Trucking and warehousing (SIC 42)	0.00	0.22	0.0 **
Agricultural services (SIC 07)	0.00	0.24	0.0 **
Nonmetallic minerals, except fuels (SIC 14)	0.00	0.63	0.0 *
Miscellaneous manufacturing industries (SIC 39)	0.00	0.70	0.0 **
Business services (SIC 73)	0.00	0.27	0.0 **
<b>MINORITY-OWNED</b>			
General building contractors (SIC 15)	3.50	8.38	41.8 **
Heavy construction, except building (SIC 16)	8.10	5.90	
Special trade contractors (SIC 17)	11.83	12.81	92.4 **
Engineering and management services (SIC 87)	13.00	4.44	
Wholesale trade--durable goods (SIC 50)	54.15	4.93	
Stone, clay, glass, and concrete product (SIC 32)	2.22	4.12	54.0 **
Electric, gas, and sanitary services (SIC 49)	0.05	4.11	1.3
Fabricated metal products (SIC 34)	23.90	4.74	
Trucking and warehousing (SIC 42)	50.11	5.51	
Agricultural services (SIC 07)	14.26	4.31	
Nonmetallic minerals, except fuels (SIC 14)	0.00	7.56	0.0 *
Miscellaneous manufacturing industries (SIC 39)	0.00	4.18	0.0 **
Business services (SIC 73)	38.83	3.71	
<b>WHITE WOMEN-OWNED</b>			
General building contractors (SIC 15)	0.75	12.74	5.9 **
Heavy construction, except building (SIC 16)	1.95	11.60	16.8 **
Special trade contractors (SIC 17)	12.00	14.08	85.3 **
Engineering and management services (SIC 87)	2.22	10.38	21.4 **
Wholesale trade--durable goods (SIC 50)	15.10	9.13	
Stone, clay, glass, and concrete product (SIC 32)	4.23	9.04	46.8 **
Electric, gas, and sanitary services (SIC 49)	0.86	9.77	8.8
Fabricated metal products (SIC 34)	3.35	7.25	46.2 *
Trucking and warehousing (SIC 42)	20.09	9.69	
Agricultural services (SIC 07)	4.34	9.74	44.6 **
Nonmetallic minerals, except fuels (SIC 14)	0.00	17.21	0.0 *
Miscellaneous manufacturing industries (SIC 39)	23.33	15.78	
Business services (SIC 73)	6.66	11.22	59.4 **

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Procurement Category / M/W/DBE Type	Utilization	Availability	Disparity Index
M/W/DBE			
General building contractors (SIC 15)	4.24	21.12	20.1 **
Heavy construction, except building (SIC 16)	10.05	17.50	57.4 **
Special trade contractors (SIC 17)	23.83	26.89	88.6 **
Engineering and management services (SIC 87)	15.22	14.83	
Wholesale trade--durable goods (SIC 50)	69.25	14.06	
Stone, clay, glass, and concrete product (SIC 32)	6.46	13.15	49.1 **
Electric, gas, and sanitary services (SIC 49)	0.91	13.87	6.6
Fabricated metal products (SIC 34)	27.26	12.00	
Trucking and warehousing (SIC 42)	70.20	15.20	
Agricultural services (SIC 07)	18.61	14.05	
Nonmetallic minerals, except fuels (SIC 14)	0.00	24.77	0.0 *
Miscellaneous manufacturing industries (SIC 39)	23.33	19.96	
Business services (SIC 73)	45.49	14.92	

Source: Calculations from NERA Master Contract/Subcontract Database for Denver and NERA Baseline Business Population database for Denver.

Note: “+” indicates an adverse disparity that is statistically significant at the 10% level or better. “\*” indicates the disparity is significant at a 5% level or better. “\*\*” indicates significance at a 1% level or better. “N/A” indicates that no adverse disparity was observed in that category.

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

**Table 7.11. Major Group Disparity Results for Denver Professional Services Contracting, 2000-2005**

Procurement Category / M/W/DBE Type	Utilization	Availability	Disparity Index
<b>BLACK</b>			
Engineering and management services (SIC 87)	5.84	0.53	
Agricultural services (SIC 07)	0.00	0.22	0.0 **
Special trade contractors (SIC 17)	1.42	0.43	
Wholesale trade--durable goods (SIC 50)	0.00	0.57	0.0 **
Trucking and warehousing (SIC 42)	18.71	0.69	
General building contractors (SIC 15)	24.15	1.96	
Heavy construction, except building (SIC 16)	0.00	0.20	0.0 †
Miscellaneous manufacturing industries (SIC 39)	0.00	0.22	0.0
<b>HISPANIC</b>			
Engineering and management services (SIC 87)	10.11	2.40	
Agricultural services (SIC 07)	0.00	3.60	0.0 **
Special trade contractors (SIC 17)	13.45	6.49	
Wholesale trade--durable goods (SIC 50)	10.26	3.65	
Trucking and warehousing (SIC 42)	56.69	4.66	
General building contractors (SIC 15)	24.20	5.54	
Heavy construction, except building (SIC 16)	1.72	2.62	65.7
Miscellaneous manufacturing industries (SIC 39)	0.00	3.20	0.0
<b>ASIAN</b>			
Engineering and management services (SIC 87)	2.01	1.11	
Agricultural services (SIC 07)	0.00	0.44	0.0 **
Special trade contractors (SIC 17)	0.00	3.51	0.0 **
Wholesale trade--durable goods (SIC 50)	0.00	0.54	0.0 **
Trucking and warehousing (SIC 42)	0.00	0.17	0.0 **
General building contractors (SIC 15)	0.00	0.27	0.0 **
Heavy construction, except building (SIC 16)	0.00	0.38	0.0 *
Miscellaneous manufacturing industries (SIC 39)	0.00	0.06	0.0
<b>NATIVE AMERICAN</b>			
Engineering and management services (SIC 87)	0.00	0.30	0.5 **
Agricultural services (SIC 07)	0.00	0.42	0.0 **
Special trade contractors (SIC 17)	0.00	1.99	0.0 **
Wholesale trade--durable goods (SIC 50)	0.00	0.50	0.0 **
Trucking and warehousing (SIC 42)	0.00	0.20	0.0 **
General building contractors (SIC 15)	0.00	0.60	0.0 **
Heavy construction, except building (SIC 16)	44.14	0.66	
Miscellaneous manufacturing industries (SIC 39)	0.00	0.70	0.0

## M/W/DBE Utilization and Disparity in Denver's Contracting Markets

Procurement Category / M/W/DBE Type	Utilization	Availability	Disparity Index
<b>MINORITY-OWNED</b>			
Engineering and management services (SIC 87)	17.97	4.35	
Agricultural services (SIC 07)	0.00	4.69	0.0 **
Special trade contractors (SIC 17)	14.87	12.40	
Wholesale trade--durable goods (SIC 50)	10.26	5.26	
Trucking and warehousing (SIC 42)	75.40	5.72	
General building contractors (SIC 15)	48.35	8.38	
Heavy construction, except building (SIC 16)	45.86	3.87	
Miscellaneous manufacturing industries (SIC 39)	0.00	4.18	0.0
<b>WHITE WOMEN-OWNED</b>			
Engineering and management services (SIC 87)	6.12	11.26	54.3 **
Agricultural services (SIC 07)	54.76	12.98	
Special trade contractors (SIC 17)	0.89	14.40	6.2 **
Wholesale trade--durable goods (SIC 50)	2.11	10.34	20.4 **
Trucking and warehousing (SIC 42)	4.79	9.40	51.0 *
General building contractors (SIC 15)	41.06	12.75	
Heavy construction, except building (SIC 16)	0.00	13.01	0.0 *
Miscellaneous manufacturing industries (SIC 39)	0.00	15.78	0.0
<b>M/W/DBE</b>			
Engineering and management services (SIC 87)	24.09	15.60	
Agricultural services (SIC 07)	54.76	17.67	
Special trade contractors (SIC 17)	15.77	26.81	58.8 **
Wholesale trade--durable goods (SIC 50)	12.37	15.60	79.3
Trucking and warehousing (SIC 42)	80.19	15.12	
General building contractors (SIC 15)	89.41	21.13	
Heavy construction, except building (SIC 16)	45.86	16.88	
Miscellaneous manufacturing industries (SIC 39)	0.00	19.96	0.0

Source: Calculations from NERA Master Contract/Subcontract Database for Denver and NERA Baseline Business Population database for Denver.

Note: “+” indicates an adverse disparity that is statistically significant at the 10% level or better. “\*” indicates the disparity is significant at a 5% level or better. “\*\*” indicates significance at a 1% level or better. “N/A” indicates that no adverse disparity was observed in that category.



### VIII. Anecdotal Evidence of Disparity in Denver's Market Place

We have presented a variety of economic and statistical findings that are consistent with and indicative of the presence of business discrimination against minorities and women in the geographic and product markets that are relevant to the City and County of Denver's contracting and procurement activities. Chapters V and VI in particular have documented large and statistically significant adverse disparities in Denver's relevant markets impacting minority and female entrepreneurs. Commercial loan denial rates are higher, the cost of credit is higher, business formation rates are lower, and business owner earnings are lower—even when comparisons are restricted to similarly situated businesses and business owners.

As a further check on these findings, we conducted a large scale survey of business establishments in these markets—both M/W/DBE and non-M/W/DBE—and asked the owners directly about their experiences, if any, with contemporary business-related acts of discrimination. We find that M/W/DBEs in Denver's markets report suffering business-related discrimination in large numbers and with statistically significantly greater frequency than non-M/W/DBEs. We find that these differences remain statistically significant when firm size and owner characteristics are held constant. We also find that M/W/DBEs in these markets are more likely than similarly situated non-M/W/DBEs to report that specific aspects of the regular business environment make it harder for them to conduct business and less likely to report that the business environment makes it easier to conduct business. Additionally, we find that M/W/DBE firms that have been hired in the past by non-M/W/DBE prime contractors to work on public sector contracts with M/W/DBE goals are rarely hired—or even solicited—by the same prime contractors to work on projects without M/W/DBE goals. The relative lack of M/W/DBE hiring and, even more tellingly, the relative lack of solicitation, of M/W/DBEs in the absence of affirmative efforts by Denver shows that business discrimination continues to fetter M/W/DBE business opportunities in Denver's relevant markets. We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

Next, we conducted extensive group interviews with minority, women and majority business owners about their experiences in seeking and performing contracts in Denver's construction market place. These focus groups confirmed the results of the statistical evidence and the mail surveys: minorities and women encounter significant barriers to the success of their firms in seeking City and private sector work, and these barriers are often the result of discrimination. The focus group comments were similar to the testimony presented at the *Concrete Works* trial, as well as the public hearing conducted by Denver in December 2005.

The remainder of this Chapter is organized as follows. We first discuss the mail survey results in Section A. In the Section A.1, we discuss the survey questionnaire, sample frame, and response rate. Section A.2 presents evidence on willingness of firms to do business with the public sector in general and the City and County of Denver in particular. Section A.3 presents the key findings from the M/W/DBE and non-M/W/DBE respondents concerning disparate treatment. Section A.4 documents disparities in firm experience and size among M/W/DBE and non-M/W/DBE respondents. Section A.5 presents the key findings concerning the impact of the regular business environment on M/W/DBEs' ability to conduct their businesses. Section A.6 presents key

## **Anecdotal Evidence of Disparity in Denver’s Market Place**

findings to our questions concerning whether prime contractors solicit or hire M/W/DBEs for work on public or private contracts without M/W/DBE goals. Section A.7 then examines whether M/W/DBEs and non-M/W/DBEs that responded to the mail surveys are representative of all M/W/DBEs and non-M/W/DBEs in the relevant markets. To do so, we surveyed a random sample of M/W/DBEs and non-M/W/DBEs that did not respond to our mail survey, and then compared their responses to key questions with those of our survey respondents.

Section B describes the results of the business experience group interviews. They are grouped under the headings of the most commonly cited barriers and issues facing M/W/DBEs and non-M/W/DBEs.

### **A. Business Experiences Surveys**

#### **1. Survey Questionnaire, Sample, and Responses**

The survey questionnaires asked whether and with what frequency firms experienced discrimination in a wide variety of likely business dealings in the previous five years. The survey also inquired about the influence of specific aspects of the everyday business environment, such as bonding and insurance requirements, on firms’ ability to do business in Denver’s relevant markets. We asked as well about the relative frequency with which firms that were used as subcontractors, subconsultants, or suppliers by prime contractors on contracts *with* M/W/DBE goals have been hired to work, or even solicited to bid, on similar contracts *without* M/W/DBE goals. Finally, we posed questions about the characteristics of the firms, including firm age, owner’s education, employment size, and revenue size to facilitate comparisons of similarly situated firms.

The mail survey sample was stratified by industry and drawn directly from the Baseline Business Universe compiled for this Study. Firms were sampled randomly within strata. M/W/DBE firms were oversampled to facilitate statistical comparisons with non-M/W/DBEs.<sup>211</sup>

Of 6,639 businesses that received the questionnaire, 611 (9.2 percent) responded to the survey.<sup>212</sup> However, 25 of these responses were unusable because the respondent left the race/ethnicity question and/or the sex question blank.<sup>213</sup> The distribution of total responses according to the race and sex of the business owner, by major procurement category, appears in Table 8.1.

#### **2. Willingness of Firms to Contract with the Public Sector**

The probative value of anecdotal evidence of discrimination increases when it comes from active businesses in the relevant geographic and procurement markets such as in the present case. The

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<sup>211</sup> See Chapter III for a discussion of how the product and geographic markets were defined and how the Baseline Business Universe was assembled.

<sup>212</sup> These figures exclude surveys that were returned undelivered or otherwise undeliverable as well as those that were completed but returned too late to be included in the analysis.

<sup>213</sup> The total number of valid responses to any particular survey question, however, was sometimes lower than this since not all questions were relevant to and/or answered by all respondents.

## **Anecdotal Evidence of Disparity in Denver's Market Place**

value of such evidence increases further when it comes from firms that have actually worked or attempted to work for the public sector within those markets.

As shown below in Table 8.2, there is a strong linkage between the firms responding to our mail survey and the public sector of the Denver area economy. Not only are all respondents located in the relevant geographic and product markets but, moreover, significant numbers of survey respondents have, in the last five years, worked or attempted to do work for the City and County of Denver or for other public entities in Colorado. This is observed for virtually all types of M/W/DBEs and non-M/W/DBEs in all procurement categories. Overall, almost 60 percent of M/W/DBEs and 63 percent of non-M/W/DBEs have worked or attempted to work for the City and County of Denver or some other Denver area public entity in the previous five years. In Construction and Architecture and Engineering Services (A&E), higher percentages of M/W/DBEs than non-M/W/DBEs have worked or attempted to work for the City and County of Denver or some other Denver area public entity in the previous five years. In Construction, more than 74 percent of M/W/DBEs indicated this, compared to 66 percent for non-M/W/DBEs. In A&E, the figure for M/W/DBEs is 87 percent compared to 59 percent for non-M/W/DBEs. In Concessions-related Goods and Services, however, the reverse is observed, with somewhat higher fractions of non-M/W/DBEs seeking work with the public sector in recent years.

### **3. Experiences of Disparate Treatment in Business Dealings**

The survey included questions about instances of disparate treatment based on race and/or sex experienced in various business dealings during the past five years. As shown in the last row of Table 8.3, fully half of all minority-owned firms and two-fifths of White women-owned firms said they had experienced at least one instance of disparate treatment in one or more areas of the business dealings identified on the survey. Reports of disparate treatment were highest among Hispanics—all with an overall rate of just under 60 percent. Overall rates were somewhat lower for Asians and White women, 50 percent and 42 percent, respectively, but these rates as well are far higher than those reported by White Men, casting doubt on claims of widespread “reverse discrimination.” Similar patterns were observed when the data were disaggregated by procurement category as well.

The balance of Table 8.3 shows results for each of 14 distinct types of disparate treatment covered in the survey. In most categories, the difference in reported amounts of disparate treatment between M/W/DBEs and non-M/W/DBEs is large. In the area of commercial loans, surety bonds, joining and/or dealing with trade associations, and obtaining price quotes from suppliers for example, minority firms reported being discriminated against roughly 5 to 7 times more frequently than White males. In all but one of the remaining areas, M/W/DBEs were between 50 percent and 200 percent more likely to encounter discrimination than non-M/W/DBEs. For White women-owned firms, the differences are large as well, though not so large as those observed for minority firms. In all but three areas (hiring from union hiring halls, working or attempting to work on public sector prime contracts, working or attempting to work on public sector subcontracts), White women reported encountering discrimination 40 percent to 250 percent more often than did White males. In no case do non-M/W/DBEs report disparate treatment more frequently than M/W/DBEs.

## Anecdotal Evidence of Disparity in Denver's Market Place

For Blacks, there are 11 categories where more than one-in-four reported discrimination, the most frequent being applying for surety bonds. For Hispanics, there are nine categories where more than one-in-four reported discrimination, the most frequent being receiving timely payment for work performed. For Asians, there are seven categories where more than one-in-four reported discrimination, the most frequent being working or attempting to work on public sector subcontracts. For Native Americans, there are five categories where more than one-in-four reported discrimination, the most frequent being receiving timely payment for work performed. For White women, the top three areas where discriminatory treatment was reported are: (A) receiving timely payment for work performed, (B) working or attempting to work on private sector prime contracts, and (C) working or attempting to work on private sector subcontracts. Table 8.4 represents the same disparate treatment information as in Table 8.3, but with the frequency percentages replaced by relative rankings. That is, the 14 kinds of disparate treatment are ranked by each group according to the frequency with which discrimination was reported, with “1” representing the most frequent and “14” representing the least frequent.<sup>214</sup> As the table makes clear, there is a high degree of correlation among the rankings, indicating that different groups of minorities and women tended to rank order problem areas quite similarly—problems that ranked high on one group’s list tended to be high on the other groups’ lists and vice-versa.<sup>215</sup>

It has been argued by some that findings such as those in Table 8.3 tell us nothing about discrimination against M/W/DBEs, despite being current, direct from the victims of such discrimination, restricted to the relevant geographic and product markets, disaggregated by procurement category and disaggregated by race and sex, because this evidence does not compare firms of similar size, qualifications, or experience. We have argued elsewhere against such flawed logic and economics, since size, qualifications, and experience are *precisely* the factors that are adversely impacted by discrimination (Wainwright, 2000, 86-87). The Tenth Circuit recognized this fact in *Concrete Works III*, holding that size and experience are not race- and gender- neutral variables: “M/WBE construction firms are generally smaller and less experienced *because* of discrimination.”<sup>216</sup> Nevertheless, if disparities are still observed even when such “capacity” factors are held constant, the case becomes all the more compelling. The results reported below in Table 8.5 show that even when levels of size, qualifications, and experience are held constant across firms, disparate treatment of both minorities and White women is still quite evident.

In Table 8.5, we report the results from a series of disparate treatment Probit regressions using the mail survey data.<sup>217</sup> As indicated earlier, the survey questionnaires collected data related to each firm’s size, qualifications, and experience. The reported estimates from these models can be interpreted as changes or differences in the probability of disparate treatment conditional on the

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<sup>214</sup> There were ties in several categories, so not all columns have 14 distinct ranks.

<sup>215</sup> Kendall’s rank correlation statistic (also known as Kendall’s coefficient of concordance or Friedman’s analysis of variance) for the Black, Hispanic, Asian, Native American, and White female rankings in Table 8.4 is 0.509 (one a scale of 0 to 1 – 1 being perfect correlation) confirms this impression. It is statistically significant within a 95% or better confidence interval. The Kendall statistic comparing all minorities to White women is 0.906 and also highly significant. For more on this test, see Goldstein (1991).

<sup>216</sup> *Id.* at 981 (emphasis in the original).

<sup>217</sup> See Chapter V for a description of Probit regression.

## Anecdotal Evidence of Disparity in Denver's Market Place

control variables. For race and gender the estimates in the table show large differences in disparate treatment probabilities between the indicated group and the base group (non-M/W/DBEs). In Column (1) of Table 8.5 (in which the regression model contains only M/W/DBE status and industry category indicators), the estimated coefficient of 0.150 on the M/W/DBE indicator can be interpreted as indicating that the likelihood of experiencing disparate treatment for M/W/DBE firms is 15.0 percentage points higher than that for non-M/W/DBE firms.

The remainder of Table 8.5 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race or sex. In Column (2) a number of controls are included that distinguish the size and experience of the firm and the education of the owner. Even after controlling for these differences in experience, size, and qualifications, however, M/W/DBE firms remain 15.5 percentage points more likely than non-M/W/DBE firms to experience disparate treatment.<sup>218</sup> This difference is statistically significant within a 95 percent confidence interval or better.

The models reported in Columns (3) and (4) of Table 8.5 are the same as in (1) and (2), respectively, except that the M/W/DBE indicator is parsed into two components—one for minority firms and one for White women. In Column (3), the estimated coefficient of 0.180 on the Minority M/W/DBE indicator and 0.143 on the White Female indicator shows that the likelihood of experiencing disparate treatment for minority firms is 18.0 percentage points higher and that for White women-owned firms is 14.3 percentage points higher than that for non-M/W/DBE firms.<sup>219</sup> Both differences are statistically significant within a 95 percent confidence interval or better. Once again in Column (4), controlling for size, experience, and qualifications does not significantly alter the size or significance of the observed disparity.

The regression models reported in Table 8.5 used as their dependent variable an indicator of whether or not a survey respondent had been treated less favorably in *any* of the 14 different types of business dealings described in the first column of Table 8.3. We re-estimated the three regression models reported in Columns (2) and (4) of Table 8.5 separately using as the dependent variable, in turn, each of the 14 types of business dealings (a total of 28 distinct regressions) and report those results in Table 8.6. As Table 8.6 shows, large and statistically significant amounts of disparate treatment are observed in the large majority of cases.

### 4. Disparities in Firm Experience and Firm Size

Disparate treatment of minority-owned and women-owned business enterprises and their owners in the market place leads predictably to the types of statistical disparities in outcomes that were

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<sup>218</sup>This estimate largely replicates the raw difference in disparate treatment rates between MBE and non-MBE firms reported in the second to last row of Table 8.3. The raw differential observed there ( $0.500 - 0.229 = 0.271$ ) differs slightly from the 0.309 differential reported here because this specification also controls for whether the business is owned by a woman and for industry category.

<sup>219</sup>This estimate largely replicates the raw difference in disparate treatment rates between MBE and non-MBE firms reported in the second to last row of Table 8.3. The raw differential observed there ( $0.500 - 0.229 = 0.271$ ) differs slightly from the 0.309 differential reported here because this specification also controls for whether the business is owned by a woman and for industry category.

## Anecdotal Evidence of Disparity in Denver's Market Place

documented for the City and County of Denver in Chapters V and VI above. These statistical disparities are evident among our mail survey respondents as well.

We asked M/W/DBE and non-M/W/DBE respondents several background questions concerning firm experience, owner qualifications, and firm size. Tables 8.7 through 8.10 report the findings from these questions.

Table 8.7 shows the findings with respect to firm age. It is evident from this table that minority-owned firms and women-owned firms are younger, on average, than their non-minority male counterparts, both across industries and within them. In Construction, for example, 10.9 percent of White male-owned firms reported that their businesses were over 50 years old. None of the minority- or women-owned firms reported being this old. Another 23.1 percent of White male-owned firms reported businesses in the 26 to 50 year age range. In contrast, only 13.3 percent of minorities and 14.0 percent of White women were observed in this age category.

Table 8.8 shows the distribution of M/W/DBE and non-M/W/DBE firms by the number of employees on their payrolls at the time of the survey. On average, across industries, minority-owned firms and White-female owned firms are smaller than their White male counterparts. In the top panel of Table 8.8, for example, we see that 75.0 percent of minority-owned firms and 85.5 percent of White female-owned firms had 10 or fewer employees on their payroll, compared with 67.2 percent for non-M/W/DBEs. At the upper end of the spectrum the phenomenon is observed in reverse—0.0 percent of minority firms and 0.5 percent of White female firms had over 100 employees, compared with 7.8 percent of non-M/W/DBEs. A similar pattern is observed when results are disaggregated by procurement category.<sup>220</sup>

Table 8.9 shows the distribution of M/W/DBE and non-M/W/DBE firms by their total gross sales or revenues during 2004 (the last full year prior to the survey). As with employment size, M/W/DBE firms are over-represented among small firms and under-represented among larger ones, both across and within industries. The top panel of Table 8.9, for example, shows that 56.2 percent of minority-owned firms and 64.2 percent of White female-owned firms had \$500,000 or less in total gross sales or revenues in 2004, compared with only 41.8 percent for non-M/W/DBEs. At the upper end of the spectrum the reverse is true—only 9.6 percent of minority firms and 2.4 percent of White female firms had over \$5,000,000 in total gross sales or revenues, compared with 18.1 percent of non-M/W/DBEs. A similar pattern is observed by procurement category as well.<sup>221</sup>

Some judges and other observers have suggested that lack of qualifications, rather than discrimination, is the best explanation for the observed adverse disparities facing M/W/DBEs in Denver and elsewhere in the U.S. Table 8.10, which shows our survey findings with respect to the question about the highest level of education reached by the firm's primary owner, provides evidence to the contrary.<sup>222</sup> Minority owners were slightly less educated, on average, than the

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<sup>220</sup> The exception is in A&E.

<sup>221</sup> The exception is in A&E.

<sup>222</sup> Aronson (1991, 24-25) contains an informative discussion on the positive effect of education on business ownership.

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White males in our sample. Minority owners had less education in Commodities and Services, but equivalent levels in Construction and higher levels in A&E. The White women responding to our survey were slightly more educated, on average, than our White male respondents. White women had more education in all procurement categories except concession-related Commodities.

### 5. Impact of Current Business Environment on Ability to Win Contracts

The survey asked questions about some common features of the business environment to determine which factors were perceived by M/W/DBEs as serious impediments to obtaining contracts. As Table 8.11 shows, substantial percentages of both M/W/DBEs and non-M/W/DBEs report that certain factors, such as “Bonding requirements” and “Obtaining working capital,” make it harder or impossible for firms to obtain contracts. Indeed, minorities reported greater difficulty in 8 out of the 9 factors we polled them about and White women in 9 out of 9.

To control for firm and owner characteristics we use a regression technique known as the ordered Probit.<sup>223</sup> Ordered Probit regression is used when the dependent variable is discrete and ordinal (and hence can be ranked). We use ordered Probit to model the ordinal ranking—helps me (1), no effect (2), makes it harder (3), and makes it impossible (4)—of the aspect of procurement under consideration. The firm characteristics used as control variables consist of the age of the firm, the number of employees, the size of revenues, and the education level of the primary owner of the firm. To report results from ordered Probit analysis, we use a “+” to indicate that M/W/DBEs had more difficulty than non-M/W/DBEs with similar firm characteristics, and a “-“ to indicate that M/W/DBEs had less difficulty than non-M/W/DBEs with similar firm characteristics.

Tables 8.12-8.14 report the sign and statistical significance from the ordered Probit analysis. Table 8.12 reports results for all procurement categories combined. Table 8.13 reports results for construction and A&E. Table 8.14 reports results for goods and services. We find that when observable firm characteristics are controlled for, greater difficulties for M/W/DBEs than for non-M/W/DBEs (as indicated by the “+” sign) are still observed in several cases. In particular, the disparities in “Previous experience requirements,” “price of supplies or materials,” and “Prior dealings with owner” are all statistically significant for minorities.

### 6. Solicitation and Use of M/W/DBEs on Public and Private Projects Without Affirmative Action Goals

Our second to last survey question asked, “How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses also hire your firm on projects (public or private) *without* such goals or requirements?” Fully two-thirds of M/W/DBE firms (68.0 percent) responded that this seldom or never happens. Similar results were observed for all minority groups and for white women, both overall and by procurement category.

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<sup>223</sup>For a textbook discussion of ordered Probit, see, for example, Greene (1997).

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At least one court has held that the failure of prime contractors to even solicit qualified minority- and women-owned firms is a “market failure” that established the government's compelling interest in remedying that failure.<sup>224</sup> Among the evidence relied upon for this holding was a survey similar to that performed for Denver, in which approximately 50 percent of the respondents reported that they were seldom or never solicited for non-goals work.<sup>225</sup>

Our final survey question therefore asked “How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses *solicit* your firm on projects (public or private) without such goals or requirements?” Responses to this question are tabulated in Table 8.16, which shows the same pattern as in Table 8.15. Overall, just under 69 percent of M/W/DBEs report that they are seldom or never solicited for non-goals work. Once again, similar results are observed for all minority types and for White women, both across and within procurement categories.

### 7. Caveats

As our mail survey was voluntary we must account for the fact that a majority of those who received it did not respond (the typical outcome for any voluntary mail surveys). As a check on the representativeness of our mail survey findings, we conducted telephone surveys of 350 randomly selected M/W/DBEs and non-M/W/DBEs that did not respond to our mail survey. The purpose of this “non-response” survey is to test whether their answers to key survey questions were systematically different from the answers of respondents. We obtained responses from 176 firms, for a response rate of 50.3 percent.

Of the firms we completed interviews with, 12 percent were minority-owned, compared with a rate of 13 percent in the mail survey. The percentage of women-owned firms was 35 percent, compared to 43 percent in the mail survey. Neither of these differences is statistically significant.<sup>226</sup>

According to the results of the non-response surveys, 12 percent of the M/W/DBEs that did not respond to our mail survey said bonding requirements made it harder or impossible to obtain contracts. This difference is not statistically significantly different from the 17 percent of M/W/DBEs that said this in the mail survey. Among the non-M/W/DBEs that did not respond to the mail survey, however, the figure was 8 percent—an amount statistically significantly different from the 20 percent reported by non-M/W/DBEs in the mail survey. Thus, the disparities observed for M/W/DBEs in our mail survey with regard to bonding may, in fact, be even larger than what we have reported here.

According to the results of the non-response surveys, 14 percent of the M/W/DBEs that did not respond to our mail survey said they had experienced at least one instance of discrimination in the last five years while seeking credit for their business. This is not statistically significantly different from the 10 percent of M/W/DBEs that said this in the mail survey. Among the non-

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<sup>224</sup> *Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725, 737 (N.D. Ill. 2003).

<sup>225</sup> *Id.*

<sup>226</sup> In a two-tailed test at a 5 percent probability value.

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M/W/DBEs that did not respond to the mail survey the figure was 6 percent—an amount not statistically significantly different from the 3 percent reported by non-M/W/DBEs in the mail survey. In both the mail survey and the non-response surveys, therefore, no statistically significant differences in the amount of reported discrimination in credit opportunities was apparent for either M/W/DBEs or non-M/W/DBEs.

According to the results of the non-response surveys, 6 percent of the M/W/DBEs that did not respond to our mail survey said they had experienced at least one instance of discrimination in the last five years while seeking price quotes from suppliers. This is not statistically significantly different from the 11 percent of M/W/DBEs that said this in the mail survey. Among the non-M/W/DBEs that did not respond to the mail survey the figure was 2 percent—an amount not statistically significantly different from the 3 percent reported by non-M/W/DBEs in the mail survey. In both the mail survey and the non-response surveys, therefore, no statistically significant differences in the amount of reported discrimination in obtaining supplier price quotes was apparent for either M/W/DBEs or non-M/W/DBEs.

For all three questions examined, therefore, the basic qualitative finding of more problems and greater disparities being observed among M/W/DBEs than among non-M/W/DBEs is not changed by the results of our non-response analyses.

### **B. Business Owner Interviews**

To explore additional anecdotal evidence of possible discrimination against minorities and women in Denver's construction market place, we conducted four group interviews. We met with a total of 31 construction and design business owners. Firms ranged in size from large international businesses to new start-ups. Owners' backgrounds included individuals with decades of experience in their fields, to young entrepreneurs beginning their careers. We sought to explore their experiences in seeking and performing public sector and private sector contracts, and with Denver's current SBE Program, the DBE Program for construction and engineering contracts at Denver International Airport and the former M/WBE Program. This effort gathered individual perspectives to augment the statistical information from the business experience and credit access surveys. In general, interviewees' individual experiences mirrored the responses to the business experience surveys. We also elicited recommendations for improvements to Denver's procurement practices in general and the M/W/DBE Programs in particular, reported below in Chapter IX.

The following are summaries of the issues discussed. Quotations are representative of the views expressed by many participants.

#### **1. Perceptions of Competence and Higher Performance Standards**

One overriding theme of the interviews is that while significant progress has been made in integrating minorities and women into Denver's public and private sector contracting activities, many barriers remain. Perhaps the most subtle and difficult to address is that of perceptions and stereotypes. Minorities and women repeatedly discussed their struggles with negative perceptions and attitudes of their capabilities in the business world.

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Several M/W/DBEs reported that White males and City staff generalize from one or two bad experiences with one or two M/W/DBEs to all M/W/DBEs. These stereotypes of lack of competence infect all aspects of minorities' and women's attempts to obtain contracts and to be treated equally in performing contracts. They have to go the "extra mile" to be considered as good as their White male counterparts.

A WBE recounted the following example. At a goals committee<sup>227</sup> meeting in 2003, a Parks and Recreation Department employee expressed the opinion that "the goals were zero because we want this done right...This is a complicated project and we want it done right...we can't have mistakes...so we can't have any goals on this." After Committee members complained, the employee was allegedly reprimanded (but the disciplinary action was left unclear). The Mayor's Office of Contract Compliance was also informed of the incident and the various Departments were supposed to receive training. This account was corroborated by correspondence from the City apologizing for this incident.

M/W/DBEs in highly specialized fields felt that their competencies were especially suspect. Using them is perceived as risky.

A Hispanic contractor reported that a DIA engineer told him that "being a Mexican, I did shitty work," and refused to pay him the full value of his work.

Another minority contractor described excessive worksite oversight from City inspectors. He received over 300 letters. Further, the only employees questioned were White; they were interrogated about "why they were working for a Black-owned firm." The firm did complain to the City, and the harassment finally stopped when the inspectors were directed to work cooperatively with the firm.

Women reported that the construction industry is still very sexist. One described when a representative from a prime contractor told her on a DIA project that "no cunt women down at Denver are going to make me hire you," after she had been awarded the subcontract.

Firms that did complain usually received no relief or were punished; they "learned not to complain again." Others were afraid that they would be "blackballed" if they spoke up. While one WBE was told by an employee of the Colorado Department of Transportation that she was not selected because she is a woman and to file a complaint, she demurred because of fears of retaliation.

Discrimination against M/W/DBEs, particularly those owned by Black and Hispanics, is exacerbated by the family nature of the construction industry. "[T]hey've got their sons and their daughters that they want to keep in the business." Outsiders are kept that way: outside.

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<sup>227</sup> Art. VII, Sec.28-205(c) provides for the establishment of three goals committees to advise and assist the Director of the Division of Small Business Opportunity in contract goal setting.

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### **2. Effects of the Suspension of the M/WBE Program**

Minorities and women were uniform in their opinions that the suspension of the M/WBE Program in the wake of *Concrete Works III* had hurt their firms. Whatever the flaws in the old Program, the Small Business Enterprise Program was not an adequate substitute. There was the experience that “DBE or SBE opportunities have just sort of lessened over time.”

### **3. Applying for Commercial Loans and Surety Bonds**

Many MBEs stated that they found it difficult to obtain working capital. However, given that all of the minority and women participants had been in business for some time, this barrier lessened over time.

Many firms reported difficulty obtaining surety bonds. The underwriting standards were so strict that they could not qualify. They saw it as similar to lending discrimination, since the criteria are very similar. Relief came only through either the passage of time and the development of more resources and industry contracts.

### **4. Obtaining Work on Public Sector Projects**

Most M/W/DBEs expressed frustration with obtaining public sector contracts as prime contractors. This sentiment crossed industries, size of firms, and length of time in business. Few were successful on a regular basis in being awarded prime contracts, despite their strong desire to act as prime contractors or consultants.

Many firms, especially in design services, vigorously pursue work as prime contractors but find it virtually impossible to succeed because of the large size of Denver's projects, or impossible to satisfy insurance or bonding requirements. This was especially problematic for engineers and architects who are relegated to ancillary services as subconsultants. This makes it even more difficult to gain the requisite experience to qualify for larger and more lucrative projects.

### **5. Obtaining Work on Private Sector Projects**

Most M/W/DBEs had little success in obtaining work on private sector projects, even as subcontractors. Similar to the results of the survey, they reported that prime contractors or consultants that use them successfully and repeatedly on Denver contracts or other projects with mandated affirmative action goals rarely or never solicit or hire them regarding private work. Further, private projects were virtually impossible to access because they are out of the reach of minorities' and women's business, community and personal networks.

However, one Asian-American design firm owner reported that because of “cronyism” at the City, he has found more success in the private sector; approximately 80 percent of his work is private sector. One WBE is solicited for non-goals jobs because of her highly specialized work that general contractors will rarely self-perform.

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### **6. Conclusion**

In general, minorities and women reported that they still encounter significant barriers to doing business in the public and private sector market places in Denver. They often suffer from stereotypes about their suspected lack of competence and are subject to higher performance standards than similar White men. They encounter discrimination in obtaining loans and surety bonds. While achieving some success in being awarded City contracts and subcontracts, M/W/DBEs report that it is still unusual for them to receive prime contracts. This is particularly problematic for engineering and architecture firms.

Very few M/W/DBEs have obtained work in the private sector. Prime contractors and consultants that use them on projects with affirmative action goals seldom or never use them, or even solicit them, for participation on non-goals jobs. Minorities and women attributed this market failure to active and passive discrimination.

These findings mirror the results from the mail survey. Taken together, this is strong anecdotal evidence that minorities and women still suffer discrimination in Denver's public and private sector construction and design markets.

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### C. Tables

**Table 8.1. Race, Sex and Procurement Category of Mail Survey Respondents**

<b>Group</b>	<b>Construction</b>	<b>A/E Services</b>	<b>Other Services</b>	<b>Commodities</b>	<b>Total</b>
<b>Black</b>	2	2	1	2	7
<b>Hispanic</b>	21	4	11	11	47
<b>Asian</b>	3	3	0	3	9
<b>Native American</b>	4	0	2	4	10
<b>White Women</b>	60	15	44	104	223
<b>Total M/W/DBE</b>	90	24	58	124	296
<b>White Men</b>	147	17	52	74	290
<b>Total</b>	237	41	110	198	586

Source: NERA mail surveys conducted in October-November, 2005.

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**Table 8.2. Survey Respondents Indicating They Had Worked or Attempted to Work for Public Sector Agencies in the Last Five Years**

<b>Worked or Attempted to Work, Last Five Years</b>	<b>Black</b>	<b>Hispanic</b>	<b>Asian</b>	<b>Native American</b>	<b>Total Minorities</b>	<b>White Women</b>	<b>Total M/W/DBEs</b>	<b>White Men</b>
<b>ALL INDUSTRIES</b>								
<b>With the City and County of Denver</b>	42.9%	34.0%	44.4%	20.0%	34.2%	33.6%	33.8%	32.9%
	(7)	(47)	(9)	(10)	(73)	(220)	(293)	(286)
<b>With Other Public Entity in Colorado</b>	71.4%	60.9%	77.8%	40.0%	61.1%	54.4%	56.1%	60.9%
	(7)	(46)	(9)	(10)	(72)	(215)	(287)	(281)
<b>With any Public Entity in Colorado</b>	71.4%	66.0%	77.8%	50.0%	65.8%	57.4%	59.5%	63.1%
	(7)	(47)	(9)	(10)	(73)	(216)	(289)	(282)
<b>CONSTRUCTION</b>								
<b>With the City and County of Denver</b>	50.0%	47.6%	66.7%	0.0%	43.3%	41.7%	42.2%	38.2%
	(2)	(21)	(3)	(4)	(30)	(60)	(90)	(144)
<b>With Other Public Entity in Colorado</b>	100.0%	52.4%	100.0%	75.0%	63.3%	71.2%	68.5%	64.3%
	(2)	(21)	(3)	(4)	(30)	(59)	(89)	(143)
<b>With any Public Entity in Colorado</b>	100.0%	61.9%	100.0%	75.0%	70.0%	76.3%	74.2%	66.4%
	(2)	(21)	(3)	(4)	(30)	(59)	(89)	(143)
<b>A&amp;E</b>								
<b>With the City and County of Denver</b>	100.0%	50.0%	66.7%	-	66.7%	64.3%	65.2%	23.5%
	(2)	(4)	(3)	(0)	(9)	(14)	(23)	(17)
<b>With Other Public Entity in Colorado</b>	100.0%	75.0%	100.0%	-	88.9%	85.7%	87.0%	58.8%
	(2)	(4)	(3)	(0)	(9)	(14)	(23)	(17)
<b>With any Public Entity in Colorado</b>	100.0%	75.0%	100.0%	-	88.9%	85.7%	87.0%	58.8%
	(2)	(4)	(3)	(0)	(9)	(14)	(23)	(17)
<b>OTHER SERVICES</b>								
<b>With the City and County of Denver</b>	0.0%	18.2%	-	0.0%	14.3%	32.6%	28.1%	26.9%
	(1)	(11)	(0)	(2)	(14)	(43)	(57)	(52)
<b>With Other Public Entity in Colorado</b>	0.0%	70.0%	-	0.0%	53.8%	39.0%	42.6%	54.9%
	(1)	(10)	(0)	(2)	(13)	(41)	(54)	(51)
<b>With any Public Entity in Colorado</b>	0.0%	72.7%	-	0.0%	57.1%	41.5%	45.5%	59.6%
	(1)	(11)	(0)	(2)	(14)	(41)	(55)	(52)

## Anecdotal Evidence of Disparity in Denver's Market Place

Worked or Attempted to Work, Last Five Years	Black	Hispanic	Asian	Native American	Total Minorities	White Women	Total M/W/DBEs	White Men
<b>COMMODITIES</b>								
<b>With the City and County of Denver</b>	0.0%	18.2%	0.0%	50.0%	20.0%	25.2%	24.4%	28.8%
	(2)	(11)	(3)	(4)	(20)	(103)	(123)	(73)
<b>With Other Public Entity in Colorado</b>	50.0%	63.6%	33.3%	25.0%	50.0%	46.5%	47.1%	58.6%
	(2)	(11)	(3)	(4)	(20)	(101)	(121)	(70)
<b>With any Public Entity in Colorado</b>	50.0%	63.6%	33.3%	50.0%	55.0%	49.0%	50.0%	60.0%
	(2)	(11)	(3)	(4)	(20)	(102)	(122)	(70)

Source: NERA mail surveys conducted in October-November, 2005.

Note: Total number of valid responses in parentheses.

## Anecdotal Evidence of Disparity in Denver's Market Place

Table 8.3. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Sex While Participating in Business Dealings

Business Dealings	Black	Hispanic	Asian	Native American	Total Minorities	White Women	Total M/W/DBEs	White Men
Applying for commercial loans	33.3% (3)	<b>23.5%</b> <b>(34)</b>	0.0% (4)	33.3% (3)	<b>22.7%</b> <b>(44)</b>	<b>16.5%</b> <b>(121)</b>	<b>18.2%</b> <b>(165)</b>	4.7% (172)
Applying for surety bonds	<b>100.0%</b> <b>(1)</b>	<b>14.3%</b> <b>(28)</b>	33.3% (3)	33.3% (3)	<b>20.0%</b> <b>(35)</b>	9.6% (83)	<b>12.7%</b> <b>(118)</b>	3.0% (134)
Applying for comer. or Professional insurance	0.0% (3)	8.3% (36)	20.0% (5)	<b>28.6%</b> <b>(7)</b>	<b>11.8%</b> <b>(51)</b>	7.6% (158)	8.6% (209)	4.5% (198)
Hiring workers from union hiring halls	- (0)	0.0% (20)	0.0% (1)	0.0% (2)	0.0% (23)	2.3% (44)	1.5% (67)	1.1% (91)
Obtaining price quotes from suppliers or subs	0.0% (3)	<b>30.6%</b> <b>(36)</b>	33.3% (3)	0.0% (7)	<b>24.5%</b> <b>(49)</b>	13.0% (138)	<b>16.0%</b> <b>(187)</b>	4.8% (187)
Working or attempting to obtain work on public sector prime contracts	33.3% (3)	<b>35.5%</b> <b>(31)</b>	<b>50.0%</b> <b>(6)</b>	25.0% (4)	<b>36.4%</b> <b>(44)</b>	18.9% (111)	23.9% (155)	18.4% (152)
Working or attempting to obtain work on public sector subcontracts	33.3% (3)	31.0% (29)	<b>60.0%</b> <b>(5)</b>	16.7% (6)	32.6% (43)	20.5% (117)	23.8% (160)	21.8% (156)
Working or attempting to obtain work on private sector prime contracts	33.3% (3)	<b>31.3%</b> <b>(32)</b>	20.0% (5)	16.7% (6)	<b>28.3%</b> <b>(46)</b>	<b>21.8%</b> <b>(124)</b>	<b>23.5%</b> <b>(170)</b>	9.4% (180)
Working or attempting to obtain work on private sector subcontracts	33.3% (3)	<b>33.3%</b> <b>(30)</b>	25.0% (4)	16.7% (6)	<b>30.2%</b> <b>(43)</b>	20.2% (129)	<b>22.7%</b> <b>(172)</b>	10.7% (178)
Receiving timely payment for work performed	40.0% (5)	<b>47.2%</b> <b>(36)</b>	33.3% (6)	40.0% (5)	<b>44.2%</b> <b>(52)</b>	28.7% (150)	<b>32.7%</b> <b>(202)</b>	19.2% (198)
Functioning without hindrance or harassment on the work site	25.0% (4)	<b>25.8%</b> <b>(31)</b>	<b>40.0%</b> <b>(5)</b>	0.0% (7)	<b>23.4%</b> <b>(47)</b>	15.6% (135)	<b>17.6%</b> <b>(182)</b>	7.2% (181)
Joining or dealing with trade associations	33.3% (3)	<b>26.9%</b> <b>(26)</b>	20.0% (5)	0.0% (4)	<b>23.7%</b> <b>(38)</b>	6.5% (93)	<b>11.5%</b> <b>(131)</b>	3.8% (157)
Having to do extra work not required of others	33.3% (3)	22.6% (31)	20.0% (5)	0.0% (5)	20.5% (44)	16.3% (123)	17.4% (167)	11.5% (183)
Having to meet quality or performance stds. not required of others	33.3% (3)	<b>23.5%</b> <b>(34)</b>	20.0% (5)	0.0% (8)	<b>20.0%</b> <b>(50)</b>	11.7% (128)	<b>14.0%</b> <b>(178)</b>	7.9% (190)
<b>In any one of the business dealings listed above</b>	40.0% (5)	<b>59.0%</b> <b>(39)</b>	50.0% (8)	22.2% (9)	<b>50.8%</b> <b>(61)</b>	41.8% (184)	<b>44.1%</b> <b>(245)</b>	33.5% (221)

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: Total number of valid responses in parentheses. Figures in **boldface** type are statistically significantly different from non-M/W/DBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in **boldface italicized** type are significant within a 90% confidence interval.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.4. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Sex While Participating in Business Dealings (Rankings)**

<b>Business Dealings</b>	<b>Black</b>	<b>Hispanic</b>	<b>Asian</b>	<b>Native American</b>	<b>Total Minorities</b>	<b>White Women</b>	<b>Total M/W/DBEs</b>
Receiving timely payment for work performed	2	1	4	1	1	1	1
Working or attempting to obtain work on public-sector prime contracts	3	2	2	4	2	5	2
Working or attempting to obtain work on public-sector subcontracts	3	5	1	5	3	3	3
Working or attempting to obtain work on private-Sector prime contracts	3	4	6	5	5	2	4
Working or attempting to obtain work on private-Sector subcontracts	3	3	5	5	4	4	5
Applying for commercial Loans	3	8	7	2	9	6	6
Functioning without hindrance or harassment on the work site	4	8	3	6	8	8	7
Having to do extra work not required of others	3	10	6	6	10	7	8
Obtaining price quotes from suppliers or subs	5	6	4	6	6	9	9
Having to meet quality or performance standards not required of others	3	9	6	6	11	10	10
Applying for surety bonds	1	11	4	2	11	11	11
Joining or dealing with trade associations	3	7	6	6	7	13	12
Applying for commercial or professional insurance	5	12	6	3	12	12	13
Hiring workers from union hiring halls	6	13	7	6	13	14	14

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.5. Prevalence of Disparate Treatment Facing Denver M/W/DBEs**

	(1)	(2)	(3)	(4)
M/W/DBE	0.150 (3.19)	0.155 (3.00)		
M/W/DBE-Minority			0.180 (2.45)	0.193 (2.46)
M/W/DBE-White Female			0.143 (2.77)	0.145 (2.55)
Black				
Hispanic				
Asian/Pacific Islanders				
Native American				
Owner's Education (4 indicator variables)	No	Yes	No	Yes
Firm Age (5 variables)	No	Yes	No	Yes
Employment size bracket (7 variables)	No	Yes	No	Yes
Sales/revenue size bracket (5 variables)	No	Yes	No	Yes
Industry category (4 indicator variables)	Yes	Yes	Yes	Yes
N	466.00	446.00	466.00	446.00
Pseudo R <sup>2</sup>	0.05	0.07	0.05	0.07
Chi <sup>2</sup>	32.69	42.08	32.89	42.41
Log likelihood	(295.41)	(278.55)	(295.31)	(278.38)

Source: Authors' calculations from NERA mail surveys conducted in October-November, 2005.

Note: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. T-statistics of 1.96 (1.64) or larger indicate that the result is significant within a 95 (90) percent confidence interval.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.6. Prevalence of Disparate Treatment Facing Denver M/W/DBEs, by Type of Business Dealing**

<b>Business Dealings</b>	<b>Total Minorities</b>	<b>White Women</b>	<b>Total M/W/DBEs</b>
Applying for commercial loans	19.2% (3.11)	11.8% (2.97)	11.1% (3.51)
Applying for surety bonds	27.4% (3.39)	6.8% (2.18)	8.0% (3.01)
Applying for commercial or professional insurance	12.0% (2.23)	3.4% (1.15)	4.6% (1.80)
Hiring workers from union hiring halls	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)
Obtaining price quotes from suppliers or subs	28.5% (4.10)	10.8% (2.77)	12.2% (3.76)
Working or attempting to obtain work on public sector prime contracts	13.1% (1.73)	-3.9% (-0.68)	1.8% (0.34)
Working or attempting to obtain work on public sector Subcontracts	7.9% (1.04)	-1.3% (-0.24)	1.5% (0.29)
Working or attempting to obtain work on private-sector prime contracts	18.3% (2.60)	9.3% (1.96)	10.7% (2.63)
Working or attempting to obtain work on private-sector subcontracts	18.8% (2.57)	7.0% (1.45)	9.4% (2.23)
Receiving timely payment for work performed	27.7% (3.53)	11.4% (2.09)	15.0% (3.10)
Functioning without hindrance or harassment on the work site	20.0% (3.04)	11.4% (2.73)	11.4% (3.30)
Joining or dealing with trade associations	25.1% (3.24)	8.0% (1.66)	10.7% (2.86)
Having to do extra work not required of others	9.8% (1.49)	6.9% (1.52)	7.1% (1.81)
Having to meet quality or performance standards not required of others	14.2% (2.42)	5.5% (1.42)	7.2% (2.17)
<b>In any one of the business dealings listed above</b>	<b>19.3% (2.46)</b>	<b>14.5% (2.55)</b>	<b>15.5% (3.00)</b>

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: Reported estimates are derivatives from Probit models with specifications such as in Table 8.5, columns (2), and (4). T-statistics are in parentheses. T-statistics of 1.96 (1.64) or larger indicate that the result is significant within a 95 (90) percent confidence interval.

## Anecdotal Evidence of Disparity in Denver's Market Place

Table 8.7. Firm Age, by M/W/DBE Status and Industry

<b>Firm Age</b>	<b>Minorities</b>	<b>White Women</b>	<b>Non-M/W/DBEs</b>
<b>All Industries</b>			
<b>Less than 1 Year</b>	0.0%	0.5%	0.3%
<b>1 to 2 Years</b>	2.7%	1.4%	3.5%
<b>2 to 5 Years</b>	13.7%	15.4%	11.8%
<b>5 to 10 Years</b>	17.8%	21.0%	13.2%
<b>10 to 15 Years</b>	20.5%	18.7%	16.7%
<b>15 to 25 Years</b>	21.9%	23.8%	21.3%
<b>26 to 50 Years</b>	19.2%	17.8%	22.3%
<b>Over 50 Years</b>	4.1%	1.4%	10.8%
<b>Number of Observations</b>	73	214	287
<b>Construction</b>			
<b>Less than 1 Year</b>	0.0%	0.0%	0.0%
<b>1 to 2 Years</b>	0.0%	3.5%	3.4%
<b>2 to 5 Years</b>	13.3%	10.5%	11.6%
<b>5 to 10 Years</b>	10.0%	31.6%	8.8%
<b>10 to 15 Years</b>	33.3%	21.1%	18.4%
<b>15 to 25 Years</b>	30.0%	19.3%	23.8%
<b>26 to 50 Years</b>	13.3%	14.0%	23.1%
<b>Over 50 Years</b>	0.0%	0.0%	10.9%
<b>Number of Observations</b>	30	57	147
<b>A&amp;E</b>			
<b>Less than 1 Year</b>	0.0%	0.0%	5.9%
<b>1 to 2 Years</b>	0.0%	7.7%	0.0%
<b>2 to 5 Years</b>	11.1%	38.5%	11.8%
<b>5 to 10 Years</b>	44.4%	23.1%	17.6%
<b>10 to 15 Years</b>	22.2%	7.7%	11.8%
<b>15 to 25 Years</b>	0.0%	15.4%	5.9%
<b>26 to 50 Years</b>	22.2%	7.7%	47.1%
<b>Over 50 Years</b>	0.0%	0.0%	0.0%
<b>Number of Observations</b>	9	13	17

## Anecdotal Evidence of Disparity in Denver's Market Place

Firm Age	Minorities	White Women	Non- M/W/DBEs
<b>Other Services</b>			
<b>Less than 1 Year</b>	0.0%	2.3%	0.0%
<b>1 to 2 Years</b>	7.1%	0.0%	1.9%
<b>2 to 5 Years</b>	14.3%	18.6%	15.4%
<b>5 to 10 Years</b>	21.4%	20.9%	23.1%
<b>10 to 15 Years</b>	0.0%	25.6%	17.3%
<b>15 to 25 Years</b>	14.3%	23.3%	19.2%
<b>26 to 50 Years</b>	35.7%	7.0%	11.5%
<b>Over 50 Years</b>	7.1%	2.3%	11.5%
<b>Number of Observations</b>	14	43	52
<b>Commodities</b>			
<b>Less than 1 Year</b>	0.0%	0.0%	0.0%
<b>1 to 2 Years</b>	5.0%	0.0%	5.6%
<b>2 to 5 Years</b>	15.0%	13.9%	9.9%
<b>5 to 10 Years</b>	15.0%	14.9%	14.1%
<b>10 to 15 Years</b>	15.0%	15.8%	14.1%
<b>15 to 25 Years</b>	25.0%	27.7%	21.1%
<b>26 to 50 Years</b>	15.0%	25.7%	22.5%
<b>Over 50 Years</b>	10.0%	2.0%	12.7%
<b>Number of Observations</b>	20	101	71

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: Columns in each panel may not total exactly 100.0% due to rounding.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.8. Number of Employees on Payroll, by M/W/DBE Status and Industry**

<b>Number of Employees</b>	<b>Minorities</b>	<b>White Women</b>	<b>Non-M/W/DBEs</b>
<b>All Industries</b>			
None	19.4%	28.5%	21.0%
1	5.6%	10.3%	8.3%
2 to 5	30.6%	32.7%	23.4%
6 to 10	19.4%	14.0%	14.5%
11 to 25	12.5%	10.3%	13.4%
26 to 50	9.7%	3.7%	5.5%
51 to 100	2.8%	0.0%	5.9%
101 to 250	0.0%	0.5%	4.8%
251 to 500	0.0%	0.0%	1.0%
501 to 750	0.0%	0.0%	0.3%
751 to 1,000	0.0%	0.0%	0.0%
Over 1,000	0.0%	0.0%	1.7%
	72	214	290
<b>Number of Observations</b>			
<b>Construction</b>			
None	10.3%	22.8%	17.7%
1	10.3%	3.5%	7.5%
2 to 5	20.7%	26.3%	23.1%
6 to 10	27.6%	19.3%	16.3%
11 to 25	13.8%	21.1%	17.7%
26 to 50	13.8%	5.3%	2.7%
51 to 100	3.4%	0.0%	6.8%
101 to 250	0.0%	1.8%	4.1%
251 to 500	0.0%	0.0%	1.4%
501 to 750	0.0%	0.0%	0.0%
751 to 1,000	0.0%	0.0%	0.0%
Over 1,000	0.0%	0.0%	2.7%
	29	57	147
<b>Number of Observations</b>			
<b>A&amp;E</b>			
None	0.0%	30.8%	29.4%
1	0.0%	15.4%	5.9%
2 to 5	44.4%	7.7%	23.5%
6 to 10	11.1%	30.8%	17.6%
11 to 25	11.1%	7.7%	11.8%
26 to 50	22.2%	7.7%	5.9%
51 to 100	11.1%	0.0%	5.9%
101 to 250	0.0%	0.0%	0.0%
251 to 500	0.0%	0.0%	0.0%
501 to 750	0.0%	0.0%	0.0%
751 to 1,000	0.0%	0.0%	0.0%
Over 1,000	0.0%	0.0%	0.0%
	9	13	17
<b>Number of Observations</b>			

## Anecdotal Evidence of Disparity in Denver's Market Place

Number of Employees	Minorities	White Women	Non-M/W/DBEs
<b>Other Services</b>			
None	35.7%	32.6%	28.8%
1	7.1%	11.6%	13.5%
2 to 5	35.7%	30.2%	17.3%
6 to 10	14.3%	11.6%	15.4%
11 to 25	7.1%	9.3%	5.8%
26 to 50	0.0%	4.7%	7.7%
51 to 100	0.0%	0.0%	1.9%
101 to 250	0.0%	0.0%	5.8%
251 to 500	0.0%	0.0%	1.9%
501 to 750	0.0%	0.0%	1.9%
751 to 1,000	0.0%	0.0%	0.0%
Over 1,000	0.0%	0.0%	0.0%
	14	43	52
<b>Number of Observations</b>			
<b>Commodities</b>			
None	30.0%	29.7%	20.3%
1	0.0%	12.9%	6.8%
2 to 5	35.0%	40.6%	28.4%
6 to 10	15.0%	9.9%	9.5%
11 to 25	15.0%	5.0%	10.8%
26 to 50	5.0%	2.0%	9.5%
51 to 100	0.0%	0.0%	6.8%
101 to 250	0.0%	0.0%	6.8%
251 to 500	0.0%	0.0%	0.0%
501 to 750	0.0%	0.0%	0.0%
751 to 1,000	0.0%	0.0%	0.0%
Over 1,000	0.0%	0.0%	1.4%
	20	101	74
	19.4%	28.5%	21.0%

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: Columns in each panel may not total exactly 100.0% due to rounding.

## Anecdotal Evidence of Disparity in Denver's Market Place

Table 8.9. Gross 2004 Sales or Revenues , by M/W/DBE Status and Industry

Gross Sales/Revenues in 2004	Minorities	White Women	Non-M/W/DBEs
<b>All Industries</b>			
\$0 to \$250,000	37.0%	45.2%	31.2%
\$250,001 to \$500,000	19.2%	19.0%	10.6%
\$500,001 to \$1,000,000	19.2%	15.2%	17.4%
\$1,000,001 to \$5,000,000	15.1%	18.1%	22.7%
\$5,000,001 to \$12,000,000	6.8%	1.9%	7.4%
\$12,000,001 to \$28,500,000	1.4%	0.0%	5.7%
Over \$28,500,000	1.4%	0.5%	5.0%
<b>Number of Observations</b>	<b>73</b>	<b>210</b>	<b>282</b>
<b>Construction</b>			
\$0 to \$250,000	26.7%	27.3%	22.1%
\$250,001 to \$500,000	16.7%	14.5%	13.1%
\$500,001 to \$1,000,000	30.0%	20.0%	17.9%
\$1,000,001 to \$5,000,000	13.3%	36.4%	26.9%
\$5,000,001 to \$12,000,000	10.0%	1.8%	8.3%
\$12,000,001 to \$28,500,000	3.3%	0.0%	5.5%
Over \$28,500,000	0.0%	0.0%	6.2%
<b>Number of Observations</b>	<b>30</b>	<b>55</b>	<b>145</b>
<b>A&amp;E</b>			
\$0 to \$250,000	0.0%	30.8%	50.0%
\$250,001 to \$500,000	44.4%	23.1%	6.3%
\$500,001 to \$1,000,000	0.0%	23.1%	18.8%
\$1,000,001 to \$5,000,000	55.6%	7.7%	12.5%
\$5,000,001 to \$12,000,000	0.0%	15.4%	12.5%
\$12,000,001 to \$28,500,000	0.0%	0.0%	0.0%
Over \$28,500,000	0.0%	0.0%	0.0%
<b>Number of Observations</b>	<b>9</b>	<b>13</b>	<b>16</b>
<b>Other Services</b>			
\$0 to \$250,000	57.1%	57.1%	51.0%
\$250,001 to \$500,000	14.3%	19.0%	10.2%
\$500,001 to \$1,000,000	7.1%	9.5%	16.3%
\$1,000,001 to \$5,000,000	7.1%	11.9%	12.2%
\$5,000,001 to \$12,000,000	7.1%	2.4%	2.0%
\$12,000,001 to \$28,500,000	0.0%	0.0%	6.1%
Over \$28,500,000	7.1%	0.0%	2.0%
<b>Number of Observations</b>	<b>14</b>	<b>42</b>	<b>49</b>
<b>Commodities</b>			
\$0 to \$250,000	55.0%	52.0%	31.9%
\$250,001 to \$500,000	15.0%	21.0%	6.9%
\$500,001 to \$1,000,000	20.0%	14.0%	16.7%
\$1,000,001 to \$5,000,000	5.0%	12.0%	23.6%
\$5,000,001 to \$12,000,000	5.0%	0.0%	8.3%
\$12,000,001 to \$28,500,000	0.0%	0.0%	6.9%
Over \$28,500,000	0.0%	1.0%	5.6%
<b>Number of Observations</b>	<b>20</b>	<b>100</b>	<b>72</b>

Source: Authors' calculations from the NERA mail surveys conducted in Sept.-November, 2005.

Note: Columns in each panel may not total exactly 100.0% due to rounding.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.10. Owner's Education, by M/W/DBE Status and Industry**

Owner's Education	Minorities	White Women	Non-M/W/DBEs
<b>All Industries</b>			
Some High School	7.1%	2.4%	2.5%
High School Diploma	15.7%	9.9%	14.1%
Some College	25.7%	25.9%	24.2%
Trade, Vocational or Technical Degree	15.7%	10.8%	9.4%
Bachelor's Degree	18.6%	35.8%	32.1%
Postgraduate Degree	17.1%	15.1%	17.7%
<b>Number of Observations</b>	<b>70</b>	<b>212</b>	<b>277</b>
<b>Construction</b>			
Some High School	6.7%	3.6%	2.8%
High School Diploma	13.3%	7.1%	19.1%
Some College	23.3%	32.1%	29.1%
Trade, Vocational or Technical Degree	26.7%	7.1%	5.0%
Bachelor's Degree	16.7%	35.7%	32.6%
Postgraduate Degree	13.3%	14.3%	11.3%
<b>Number of Observations</b>	<b>30</b>	<b>56</b>	<b>141</b>
<b>A&amp;E</b>			
Some High School	0.0%	0.0%	5.9%
High School Diploma	0.0%	0.0%	0.0%
Some College	0.0%	0.0%	17.6%
Trade, Vocational or Technical Degree	0.0%	7.7%	11.8%
Bachelor's Degree	55.6%	53.8%	29.4%
Postgraduate Degree	44.4%	38.5%	35.3%
<b>Number of Observations</b>	<b>9</b>	<b>13</b>	<b>17</b>
<b>Other Services</b>			
Some High School	16.7%	2.3%	0.0%
High School Diploma	33.3%	7.0%	21.6%
Some College	25.0%	30.2%	25.5%
Trade, Vocational or Technical Degree	16.7%	9.3%	9.8%
Bachelor's Degree	8.3%	30.2%	13.7%
Postgraduate Degree	0.0%	20.9%	29.4%
<b>Number of Observations</b>	<b>12</b>	<b>43</b>	<b>51</b>
<b>Commodities</b>			
Some High School	5.3%	2.0%	2.9%
High School Diploma	15.8%	14.0%	1.5%
Some College	42.1%	24.0%	14.7%
Trade, Vocational or Technical Degree	5.3%	14.0%	17.6%
Bachelor's Degree	10.5%	36.0%	45.6%
Postgraduate Degree	21.1%	10.0%	17.6%
<b>Number of Observations</b>	<b>19</b>	<b>100</b>	<b>68</b>

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: Columns in each panel may not total exactly 100.0% due to rounding.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.11. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts**

(Total number of valid responses in parentheses)

<b>Business Environment</b>	<b>Black</b>	<b>Hispanic</b>	<b>Asian</b>	<b>Native American</b>	<b>Total Minorities</b>	<b>White Women</b>	<b>Total M/W/DBEs</b>	<b>Non-M/W/DBEs</b>
<b>Bonding Requirements</b>	33.3% (3)	30.0% (20)	50.0% (4)	100.0% (3)	40.0% (30)	32.5% (80)	34.5% (110)	28.3% (99)
<b>Insurance Requirements</b>	0.0% (4)	16.1% (31)	42.9% (7)	40.0% (5)	21.3% (47)	23.1% (117)	22.6% (164)	19.7% (152)
<b>Previous Experience Requirements</b>	0.0% (3)	23.3% (30)	0.0% (8)	0.0% (5)	15.2% (46)	12.9% (124)	13.5% (170)	11.3% (168)
<b>Cost of Bidding or Proposing</b>	50.0% (4)	34.5% (29)	16.7% (6)	50.0% (4)	34.9% (43)	31.0% (116)	32.1% (159)	24.2% (153)
<b>Large Project Sizes</b>	75.0% (4)	51.9% (27)	50.0% (6)	60.0% (5)	54.8% (42)	43.2% (118)	46.3% (160)	42.2% (147)
<b>Price of Supplies or Materials</b>	33.3% (3)	55.2% (29)	0.0% (4)	40.0% (5)	46.3% (41)	31.1% (119)	35.0% (160)	29.1% (151)
<b>Obtaining Working Capital</b>	66.7% (3)	37.0% (27)	33.3% (3)	75.0% (4)	43.2% (37)	38.8% (116)	39.9% (153)	30.8% (143)
<b>Late Notice of Bid/ Proposal Deadlines</b>	50.0% (4)	55.6% (27)	25.0% (4)	40.0% (5)	50.0% (40)	51.9% (104)	51.4% (144)	51.5% (134)
<b>Prior Dealings with Owner</b>	33.3% (3)	24.0% (25)	0.0% (5)	0.0% (4)	18.9% (37)	9.5% (116)	11.8% (153)	9.0% (156)

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.12. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts**

(Total number of valid responses in parentheses)

Business Environment	Total Minorities	White Women	Total M/W/DBEs
<b>Bonding Requirements</b>	+	+	+
<b>Insurance Requirements</b>	+	+	+
<b>Previous Experience Requirements</b>	+*	+*	+*
<b>Cost of Bidding or Proposing</b>	-	-	-
<b>Large Project Sizes</b>	+	-	-
<b>Price of Supplies or Materials</b>	+*	+	+
<b>Obtaining Working Capital</b>	+	+	+
<b>Late Notice of Bid/ Proposal Deadlines</b>	+	+	+
<b>Prior Dealings with Owner</b>	+*	+	+

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: A plus (+) indicates that a group is more likely than non-M/W/DBEs to report difficulty with business environment factors. A minus (-) indicates that a group is less likely than non-M/W/DBEs to experience difficulty. An asterisk (\*) indicates that the disparity is statistically significant within a 95% or better confidence interval. A dagger (†) indicates that the disparity is statistically significant within a 90% or better confidence interval.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.13. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Construction and A&E**

(Total number of valid responses in parentheses)

Business Environment	Total Minorities	White Women	Total M/W/DBEs
Bonding Requirements	+	+	-
Insurance Requirements	+	+	+
Previous Experience Requirements	+*	+	+*
Cost of Bidding or Proposing	-	-	-
Large Project Sizes	-	-	-
Price of Supplies or Materials	+*	+	+
Obtaining Working Capital	+†	+	+
Late Notice of Bid/ Proposal Deadlines	-	+	+
Prior Dealings with Owner	+*	-	+

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.  
 Note: See Table 8.12.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.14. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Goods and Services**

(Total number of valid responses in parentheses)

Business Environment	Total Minorities	White Women	Total M/W/DBEs
Bonding Requirements	-	+	-
Insurance Requirements	-	+	-
Previous Experience Requirements	+	+*	-
Cost of Bidding or Proposing	+	+	-
Large Project Sizes	+†	+	-
Price of Supplies or Materials	+	-	-
Obtaining Working Capital	-	-	-
Late Notice of Bid/ Proposal Deadlines	+	+	-
Prior Dealings with Owner	+	+	-

Source: Authors' calculations from the NERA mail surveys conducted in October-November, 2005.

Note: See Table 8.12.

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.15. Percent of M/W/DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with M/W/DBE Goals Seldom or Never Hire Them on Projects without Such Goals**

(Total number of valid responses in parentheses)

<b>M/W/DBE Group</b>	<b>All Industries</b>	<b>Construction</b>	<b>A/E Services</b>	<b>Other Services</b>	<b>Commodities</b>
<b>Black</b>	83.3% (6)	50.0% (2)	100.0% (2)	100.0% (1)	100.0% (1)
<b>Hispanic</b>	68.6% (35)	66.7% (15)	100.0% (3)	90.0% (10)	28.6% (7)
<b>Asian</b>	66.7% (6)	50.0% (2)	50.0% (2)	- (0)	100.0% (2)
<b>Native American</b>	66.7% (3)	50.0% (2)	- (0)	- (0)	100.0% (1)
<b>Total Minorities</b>	70.0% (50)	61.9% (21)	85.7% (7)	90.9% (11)	54.5% (11)
<b>White Women</b>	67.2% (122)	53.7% (41)	53.8% (13)	74.1% (27)	80.5% (41)
<b>Total M/W/DBEs</b>	68.0% (172)	56.5% (62)	65.0% (20)	78.9% (38)	75.0% (52)

Source: NERA's mail surveys conducted in October-November, 2005

## Anecdotal Evidence of Disparity in Denver's Market Place

**Table 8.16. Percent of M/W/DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with M/W/DBE Goals Seldom or Never Solicit Them on Projects without Such Goals**

(Total number of valid responses in parentheses)

M/W/DBE Group	All Industries	Construction	A/E Services	Other Services	Commodities
<b>Black</b>	80.0% (5)	50.0% (2)	100.0% (1)	100.0% (1)	100.0% (1)
<b>Hispanic</b>	65.8% (38)	66.7% (18)	66.7% (3)	90.0% (10)	28.6% (7)
<b>Asian</b>	57.1% (7)	0.0% (2)	66.7% (3)	- (0)	100.0% (2)
<b>Native American</b>	50.0% (4)	33.3% (3)	- (0)	- (0)	100.0% (1)
<b>Total Minorities</b>	64.8% (54)	56.0% (25)	71.4% (7)	90.9% (11)	54.5% (11)
<b>White Women</b>	70.5% (112)	57.5% (40)	84.6% (13)	70.8% (24)	80.0% (35)
<b>Total M/W/DBEs</b>	68.7% (166)	56.9% (65)	80.0% (20)	77.1% (35)	73.9% (46)

Source: NERA's mail surveys conducted in October-November, 2005

## Denver's Race- and Gender-Neutral Contracting Policies and Procedures

### IX. Denver's Race- and Gender-Neutral Contracting Policies and Procedures

First, we review Denver's Small Business Enterprise Program, adopted after the prior M/WBE Program was enjoined by the federal district court in 2000. Next, we provide a summary of the interviews with business owners about Denver's contracting policies and procedures. Lastly, we present the results of interviews with City procurement staff about these issues.

#### A. Small Business Enterprise Program Overview

Denver's Small Business Enterprise (SBE) Program was adopted partly in response to the federal district court's injunction of the M/WBE Program in 2000. The SBE Program is codified in Chapter 28, *Human Rights*, Article VII, *Development and Utilization of Small Business Enterprises in City Contracts*, of the Revised Municipal Code of the City and County of Denver.<sup>228</sup> Article III of Chapter 28 prohibits discrimination in City contracts for construction, reconstruction, and remodeling and professional design and construction services. Article V prohibits discrimination in City contracts for goods and services.

In enacting the SBE Program, the City the Council found that:

such national [U.S. Small Business Administration] size standards are reasonably reflective of business size in the metropolitan Denver construction, reconstruction and remodeling, and professional design and construction services industries, that a flexible goal and development program to assist such small business enterprises, regardless of the race or gender of the owners thereof, in contracting with the city in the areas of construction, reconstruction and remodeling, and professional design and construction services would benefit city contracting by promoting competition in bidding and benefit the metropolitan area, including the city, by promoting the economic growth of such small business enterprises, and that such a flexible goal and development program is therefore justified as being related to a legitimate governmental interest of the city.

The purpose of the Program is to authorize specific activities to promote the utilization of SBEs in construction, reconstruction, and remodeling contracts and professional design and construction services contracts. The Division of Small Business Opportunity (DSBO)<sup>229</sup> is responsible for administering the SBE Program and the Disadvantaged Business Enterprise (DBE) Program applied to federally-assisted transportation contracts.<sup>230</sup> DSBO also grants waivers of SBE Program rules and regulations as warranted.

#### 1. Division of Small Business Opportunity (DSBO)

DSBO is a staff agency that reports to the Mayor. The Office has a Director and staff. Major responsibilities include development and enforcement of programs for enhancing SBE utilization in City contracts. DSBO is also responsible for promoting economic development with SBEs.

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<sup>228</sup> Codified through Ordinance No. 758-65, adopted October 17, 2005.

<sup>229</sup> Formerly the Mayor's Office of Contract Compliance.

<sup>230</sup> 49 CFR Part 26.

## **Denver's Race- and Gender-Neutral Contracting Policies and Procedures**

DSBO establishes the certification criteria for the Program. Denver also accepts DBE certifications.

DSBO participates in pre-bid or pre-selection meetings. Office staff explains project and proposal requirements and appropriate rules and regulations to potential bidders at these meetings.

The DSBO Director also provides initial administrative review for contract disputes involving Program issues. The Director may conduct a hearing(s) to receive written and oral testimony related to a contract dispute and to make a final determination. Disputants may also request reconsideration by the director of a final determination and review by a district court.

The Office also has responsibility for issuing SBE Program reports to the Mayor, City Council and department heads. These include quarterly reports describing the attainment of annual goals on projects and disclosing all change orders, amendments and modifications. DSBO must also prepare an annual report describing why SBE utilization did not meet annual aspiration goals and outlining recommendations needed to address the lack of goal attainment. DSBO must also submit a report to the City Council that details the development, creation and utilization of outreach and race-neutral initiatives. Based upon this report, DSBO may undertake, suggest and discuss alternative programs for the continuing development and utilization of SBEs.

### **2. Certification**

A SBE is defined as a business enterprise that is certified by the Director. SBEs are certified only for the certification area(s) for which they apply. Other important certification requirements include:

#### ***i.* Ownership**

A person(s) representing himself or herself as an owner(s) must have his or her own name(s) appear in the business title.

#### ***ii.* Management and control**

The owner(s) must manage and control the daily business operations of the business enterprise.

#### ***iii.* Actively in business for three months**

A business must have established its legal formation, begun business in its trade or profession and demonstrated ownership, management and control of daily business operations by the identified owner (s) at least three months before applying for certification.

#### ***iv.* Firm size**

A firm's three-year annual average gross receipts, number of employees and other criteria cannot exceed standards established by the U.S. Small Business Administration.

## Denver's Race- and Gender-Neutral Contracting Policies and Procedures

### **v. Personal net worth**

The controlling owner's personal net worth cannot exceed \$750,000, excluding the individual's equity in his or her primary residence, and the individual's ownership interest in the applicant business enterprise.<sup>231</sup>

### **vi. Threshold size; continued eligibility and renewal of certification**

A business is ineligible for certification or re-certification when the business and its affiliates meet the criteria for graduation from the program.

### **vii. City officials, officers and employees and relatives ineligible**

City officials, officers and employees and relatives who own or control a business are ineligible for SBE certification.

### **viii. Interviews, investigation and onsite visits**

DSBO interviews all persons applying for certification and is empowered to interview such other persons and conduct such onsite visits and investigations as may be appropriate in its sole discretion to verify eligibility for certification.

### **ix. Term of eligibility**

A business enterprise is certified as a SBE for three years.

The Director is also authorized to establish a peer review group of representatives engaged in construction and construction-related industries in order to receive input and advice on work performance, equipment and staffing pertaining to certification of businesses. The peer review group does not make specific recommendations involving a particular applicant business.

## **3. Goal Setting**

The Director establishes annual aspirational goals for SBE participation based on total dollars spent on construction, reconstruction, and remodeling contracts and professional design and construction services contracts. The Director also determines SBE availability as part of the recommended annual goals to the City Council.

The Director may also add SBE goal requirements to individual projects. To aid in the establishment of project goals, the Director may appoint three goals committees to provide advice and assistance: the general construction goals committee, including management services; the heavy highway construction goals committee; and the professional services goals committee. Committee members have experience in their respective industries. Members are provided a project information form to assist with their deliberations. Project managers also provide any

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<sup>231</sup> This is the same test applied in the DBE Program. *See* 49 CFR §26.67(a)(2).

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plans, information and/or materials that will assist the respective committee in making a decision.

### **4. Good Faith Efforts to Meet Project Goals**

Bidders or proposers that do not meet a project goal are required to document their good faith efforts to meet the goal. This documentation is required within three working days of bid opening or on or before the deadline for final project-specific proposal submission.

Good faith efforts include:

- Informing SBEs of subcontracting or joint venture opportunities.
- Identifying both self-performance and subcontract items of a project including structuring the project into economically feasible units to facilitate sufficient SBE participation.
- Contacting and documenting a minimum percentage of SBEs in selected subcontract portions using the most recent SBE Directory.
- Contacting SBEs at least 10 days prior to bid opening or date of final project-specific proposal and informing the SBEs about the general scope work.
- Providing documentation stating why the bidder or proposer and the SBE did not reach agreement.
- Verifying that the SBE failed to provide the lowest bid or lacked qualifications based on factors other than the amount of the SBE's bid.

### **5. Identification of SBE Participation in Projects**

The successful bidder or proposer must provide a list of all SBEs who will work on a project and satisfy the project's goal at the time of bid opening or date of a final project-specific proposal. All SBEs must perform a commercially useful function in the work of a contract within their area(s) of certification. DSBO may also request additional documentation as part of the submission. Specific required information includes:

- The name, address, telephone number, facsimile transmittal number, if any, and contact name for the SBE;
- The dollar value and description of the commercially useful function to be performed by the SBE;
- If applicable, the percentage of the value of the commercially useful function to be performed by the SBE as compared to the total contract amount;
- A verified statement from the proposer that the dollar amount of work and/or the percentage of the work (whichever is applicable) to be performed by the SBEs was

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furnished to the proposer and agreed upon prior to the time of submission of the final project-specific proposal; and

- A verified statement from the proposer that it understands that a letter of intent, including but not limited to values provided by self-performing proposers, joint venturers, subconsultants, suppliers, manufacturers and brokers, expressed in dollar values and as a percentage of the overall work, must be submitted to the Director for each SBE listed.

### 6. SBE Outreach, Assistance and Business Development

DSBO collaborates with City department heads to develop programs and activities that offer training and technical assistance to SBEs. Outreach and race- and gender-neutral activities may include, but are not limited to:

- Workshops and other group training activities, conducted by the City or by other public or private entities in collaboration with the City;
- A resource directory containing information on bonding, financial management and accounting provided to the small business community involved in the design and construction industries in the Denver metropolitan area;
- A mentoring program pairing small business enterprises with established businesses also involved in the design and construction industries in the Denver metropolitan area; and
- Other programs or activities as the Director may periodically recommend.

### B. Business Owner Interviews

To gather anecdotal evidence of the effectiveness of the SBE Program in opening up opportunities for M/W/DBEs and other small firms, we interviewed numerous M/W/DBEs and non-M/W/DBEs. We also sought feedback on other aspects of Denver's contracting policies and procedures.

#### 1. Small Business Enterprise Program

M/W/DBEs felt that the SBE Program has serious deficiencies. There was the overall perception that Denver has not provided sufficient resources to make the Program effective, which prohibits meaningful enforcement. M/W/DBEs uniformly believed that no sanctions are imposed for non-compliance. The requirement that bidders make good faith efforts was believed to be easily evaded most of the time. According to one WBE, under the M/WBE Program general contractors would not be paid if the subcontractors had not been paid. By contrast, under the SBE Program "they do nothing." Minorities and women generally felt that the SBE Program was too weak to reduce barriers to their participation. Further, the City's overall SBE goal is less than the prior MBE and WBE goals combined.

## Denver's Race- and Gender-Neutral Contracting Policies and Procedures

Regarding contract SBE goals, some M/W/DBEs felt that City employees often opposed setting goals. They asserted that City staff use the excuse of labeling a contract a “specialty project” to avoid setting goals. There is also little feedback on whether goals were met and Denver’s overall progress towards meeting the SBE goal.

Participants also claimed that firms that have been listed as the SBE on the prime contractor’s utilization plan have sometimes been substituted on the project with non-SBEs or the prime contractor’s own forces.

There was also the concern that the SBE program contains “front” or ineligible firms that are actually affiliated with large firms. At the same time, some M/W/DBEs stated that they resent the amount of financial information required for certification under the SBE Program, especially since the benefits are so much less than those provided by the former M/WBE Program. The few opportunities provided by the Program lead to the “perception of small businesses that ... it’s not worthwhile to be on that list.” Long processing times for applications were also mentioned as a disincentive to participate.

One firm reported that since he has graduated from the SBE Program he receives no City work, including from prime contractors that had used him under the SBE Program and the M/WBE Program. He is not even solicited for goals or non-goals work.

Finally, even with good enforcement and stringent certification standards, minorities believed that since 80-90 percent of the SBEs are white-owned, which has shifted the focus from reducing race discrimination to some other objective. One minority businessperson felt very strongly that the Program used the wrong methodology and set the wrong objectives. In his opinion, a longer view is needed, with emphasis on encouraging urban young people to enter the construction industry; pre-qualifying M/W/DBEs to work on certain sizes and types of contracts; mentoring programs for M/W/DBEs; and the award of contracts on the basis of potential and competency, not political connections.

Not surprisingly, non-M/W/DBEs mostly disagreed with this assessment. First, some stated that the SBE goals are too high and based upon arbitrary criteria. There is a lack of availability of SBEs in certain specialty trades, *e.g.*, paving, underground utilities, etc. This leads to the use of “brokers” to meet the goal. Even so, the single SBE goal was preferred over separate goals for MBEs and WBEs.

Prime contractors in general agreed with the M/W/DBEs that the goals committees do not function very well, and that the committee members often lacked meaningful data and feedback on whether prior goals had been met.

Some general contractors felt that there were not enough qualified and stable SBEs to meet goals. One noted that during the course of the performance of one contract, three SBEs went “belly up” or shortly after closeout. Only “viable” businesses should be certified, as demonstrated by some sort of prequalification process. Raising the graduation thresholds to reasonable levels to allow more established firms to remain in the Program would help.

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Next, the good faith efforts requirements are seen as too burdensome. "If you forget one person or you have the wrong list and there's a new person on there...it fails." Contrary to M/W/DBEs' perceptions, some majority bidders felt that the good faith efforts process for obtaining a waiver of goals is essentially a sham. When contemplating seeking a waiver, one owner was told by a City employee "[I]t is almost impossible to meet the requirements for a good faith effort ... between you and me, you'll never do it." Another non-M/W/DBE prime contractor stated that "[y]ou had to submit all your bids, but you had to have contacted everyone on the list that was available to do the work. First, you had to break down the areas of work into reasonable work-order areas that maybe you could have three electricians ... you know, break it up into three minorities." This was experienced as quite onerous.

One large general contractor, however, disagreed with this picture. He felt that under the SBE program "we don't really have any problem meeting the goals." In his experience, there is now a "good pool" of people that are bidding and those who do not bid do not want City work. He also noted that the current administration seems more open and interested in making things work efficiently; the atmosphere fosters economic development and is less punitive than in the past.

Some prime contractors were also opposed to the "forced" subcontracting that the Program's subcontracting goals create. They do not have the option of choosing a preferred subcontractor but often times must work with subcontractors with which they have no prior history or about which they have very little information. They also felt that goals should be set as a percentage only of the portion to be subcontracted, not the overall contract price. Additionally, those subcontractors with which a general contractor has an established relationship and who have proven themselves financially viable may also refuse work because of the amount of paperwork required by Denver.

One majority firm recounted that she was forced to pay a SBE subcontractor the full amount of the original subcontract even though the subcontractor had not performed the full scope of work.

There was agreement amongst M/W/DBEs and non-M/W/DBEs that more training on City policies and processes would be helpful. Subject areas mentioned were the bidding process; bid estimating; contract requirements, including insurance and bonding amounts; and submitting payment applications. There was also support for a mentor-protégé program, similar to those used in the US Department of Transportation's DBE Program or the Small Business Administration's 8(a) Program.

While the bonding program to assist small contractors on large projects was well meant, the "lock box" to which payments are sent adds delays exceeding 60 days in disbursement to the subcontractors. Coupled with long City payment timers, this was devastating to the businesses the program seeks to assist.

Some long established M/W/DBEs questioned why the City has not instituted a "linked deposit" program, whereby Denver's depository banks are encouraged to make loans to SBEs.

M/W/DBEs that had participated in the goal setting process or had long experience in the former M/WBE Program stated that DSBO should not be housed in the Department of Economic Development but should report directly to the Mayor. This would give the unit more

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administrative clout and highlight that the problems are not just economic development-related but also the result of racism and sexism in City contracting.

Another recommendation was to create regular and easily accessible reports on the operations of the SBE Program, including the progress of every City department towards meeting the goal. Participants also suggested that Denver create an independent entity to receive and resolve complaints about discrimination City contracting that could protect complainants against retaliation.

### **2. Denver's Contracting Policies and Procedures**

Participants had many comments and suggestions about the current operations of Denver's contracting policies and procedures.

#### **a. Contract specifications, solicitations and terms**

##### **i. Contract size**

Many M/W/DBEs suggested that Denver "unbundle" more contracts so that smaller firms can participate. The Hyatt Hotel, the Convention Center and the upcoming Justice Center were mentioned as projects that should have been segmented so that smaller businesses could participate.

##### **ii. Contract requirements**

Several M/W/DBE and non-M/W/DBE design firm owners discussed problems with Denver's contract requirements, in particular insurance and indemnification clauses. Often, Denver's requirements were not conversant with industry standards, *e.g.*, "negligent errors and omissions" clauses. Moreover, the City often demands much greater coverage than is necessary for the terms of the contract; the imposition of standard terms without any consideration of the actual contract scope and Denver's risks at best burdens firms, especially small firms, and at worst completely deters them from contracting with the City. While a problem for all firms, some participants stated that the larger firms often know that such terms can be negotiated. To the extent such requirements are not negotiated, participants opined that Denver pays more for its contracts than necessary, as savvy firms learn to price for the cost of overly broad policies.

Surety bonds were commonly mentioned as significant barrier to public work. M/W/DBE prime contractors had difficulty obtaining bonds. Further, construction subcontractors noted the flow down of surety bonding requirements, reducing opportunities even in that role.

One M/W/DBE complained about restrictive prequalification requirements. The requirement of the submission of audited financial statements is "an expensive thing to do if you're a small business. It should be sufficient to submit recent statements, interim statements and proof of surety bonding.

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### iii. Contract solicitation

There was much discussion about the use of procurement methods. Some M/W/DBEs felt that the increasing use of negotiated construction contracts often worked to their disadvantage: even if the M/W/DBE is the lowest bidder, the City will choose a majority-owned firm based upon subjective criteria. There was the perception that the City “will cancel the contract until they get the bid they want from the contractor they want.” There was also the belief that “lobbying and politics” taints the negotiation process. This is particularly troubling to M/W/DBEs when select negotiation is applied to modest projects (\$100,000 to \$500,000), where M/W/DBEs can more successfully compete as prime contractors. This leads to a “select” list outside of which no bids need to be considered. “Select negotiation is a double edged sword which can be used to help or hinder M/W/DBEs.”

Design-build contracts were seen to cut out subcontractors and subconsultants without established relationships with the large players that can respond to this solicitation method. One example cited was the Convention Center, where the successful proposer used its own preexisting SBE team. M/W/DBEs also felt that this procurement method was detrimental to Denver's long-term economic health because outside businesses often win these projects since price is not the defining criterion.

The long lead times for the solicitation and award of contracts was also frequently mentioned as a problem by firms of all ownerships and size, but especially smaller firms. It is difficult to schedule projects and keep crews busy when there is so much uncertainty about start dates.

Task order contracts were another subject of much criticism. Some M/W/DBEs were under the impression that task order contracts are not subject to SBE or DBE goals. While not correct, perhaps this idea was fostered by the difficulty of meeting goals on task orders that lack the scopes of work for which the contractor made SBE or DBE commitments.

The use of “on call” contracts was also seen as an “excuse not to set goals.” While “on calls” were subject to DBE goals at DIA, DBEs stated that goals can be avoided by using the task order method for those contracts. Meeting goals agreed to before the actual scopes of work are known is a drawback and increases compliance uncertainties.

### b. Contract performance

#### i. Communications with City departments

M/W/DBEs and majority firms recounted numerous instances of problems communicating with City departments. They pointed to long and unexplained delays and silences between the contract award and the receipt of the notice to proceed. Firms reported that telephone calls were routinely not returned, and that department personnel seemed to lack information about the contracts. “The City is not really the City; it is a whole bunch of different fiefdoms within the City.” This conveys the message that the City is accountable to no one.

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While these delays hurt all firms, the M/W/DBEs were particularly injured by the inability to schedule work and maintain pricing. Even when delays were caused by Denver, M/W/DBEs and non-M/W/DBEs reported that they were denied schedule extensions.

That different agencies utilize different forms creates additional headaches and the possibility for errors for all firms, but especially SBEs.

One suggestion was to implement a web-based system of contract tracking. Firms would be able to access the status of their projects and the City staff responsible for those projects. This would also facilitate payments.

### **ii. Prevailing wage requirements**

Some of the most scathing comments were directed towards the application of prevailing wage requirements. Firms of all ownership and size viewed the application of the wage scales as often arbitrary, with low skilled labor required to be paid at rates for skilled workers. Moreover, different City staff interpret the regulations differently; rates were sometimes changed in the middle of a job and a change order for the increase was denied. In contrast to DIA's process, "[f]or every one person we have managing our contract [at DIA], the City has three or four." This layering of contract management creates problems with prevailing wages and hurts contractors by requiring them to hire superfluous workers. The example provided was of a worker who "exaggerated" his duties and the City insisted that he be paid according to his self-reported description and not the actual work performed.

Further, several participants stated that there is an "adversarial attitude" between Denver and its prime contractors. Honest mistakes, especially by less experienced firms, were seen as "intentional." Employees were seen as "bulldozing" the contractor into paying wage deficiencies by threatening "you'll never work for the City again" if the firm persisted in complaining. Problems with prevailing wage documentation led to payment delays that were devastating to smaller firms. Even the larger firms complained about this: "you can be held up a million dollars by not paying some guy 15 cents an hour."

An additional concern is that Denver does not apply the federal Davis-Bacon Act scales, so the contractors are caught off guard about what rates will be imposed every year.

One suggestion was to create a manual that details and explains the application of prevailing wages to City projects. The current information available on Denver's website is not adequate, in the participants' opinions. This would help to obviate conflicting interpretations of different trade classifications and union versus non-union status.

### **iii. Change orders**

This was another area where M/W/DBEs and non-M/W/DBEs, and prime contractors and subcontractors, reported problems. There were several causes: lack of coordination between City departments; lost paperwork; too many signatures needed for sign offs. Delays of over 6 months in processing change orders were recounted by several participants. Pleas to City personnel were

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seen as unavailing. Bureaucratic layers were cited as a possible explanation rather than poor administration or indifferent attitudes.

Some subcontractors stated that the prime contractors sometimes appear “scared” to advocate for the payment of change orders involving subcontractors. One stated the “in many cases, the prime has never submitted the invoice or change order for processing.”

### **iv. Payment**

There was universal criticism about Denver’s payment procedures from both M/W/DBEs and large majority firms. Delays in payments to prime contractors flowed down to subcontractors that were even more vulnerable. Many reported waiting 90 or more days from submission of invoices to receipt of payments.

One cause of the delays is the number of people responsible for the payment process. Lack of coordination between the City’s project managers and the auditors adds months to the process. One owner described this as “silos,” wherein each department has five days to process its piece of the paperwork. The application then goes to the prevailing wage unit, then to the auditor, and then to management and budget. More sophisticated firms try to price for this cost of funds when bidding City projects, driving up costs to the taxpayers. Less sophisticated contractors either lose money or avoid City work altogether.

There also was discussion about what are perceived to be inconsistent retainage policies. This was particularly true for on-call contracts.

### **3. Denver International Airport’s Construction Disadvantaged Business Enterprise Program**

Denver International Airport (DIA) sets Disadvantaged Business Enterprise (DBE) goals on its federally-assisted construction contracts, as required by 49 CFR Part 26. This Program was contrasted favorably overall with the City’s SBE program for locally-funded projects. In general, M/W/DBEs reported much greater access and success at DIA than through the SBE program. M/W/DBEs attributed this to the race- and gender-based eligibility standards and more stringent federal regulations.

However, a few reported that the DBE Office and DSBO were not empowered to enforce compliance. One supplier noted that she was prohibited from providing a price quote for a product she had supplied to DIA for years, because her company was “too small and could not compete.” She later learned that DIA had paid her much larger competitor 20 percent more than her price.

Some non-DBEs stated that they found the DBE goals to be too high and very difficult to achieve because of the “low quality” of firms or their lack of familiarity with new DBEs. Further, one firm reported that contracts “are lost in order to meet the goal because it costs more money.”

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### C. Denver procurement official interviews

To obtain feedback from Denver procurement officials about the City's policies and procedures, as well as a check on the business owner interviews, we met with representative from relevant departments. Their observations are summarized below.

#### 1. Small Business Enterprise Program

Somewhat similar to the views expressed by the M/W/DBEs, City staff had significant reservations about the SBE program. While all recognized that after the injunction against the M/WBE Program only a race- and gender-neutral approach was permitted, their experiences with the SBE Program are useful in narrowly tailoring any new race- and gender-conscious remedial initiatives as well as improving the operations of the SBE Program. They had many comments relevant to whether a race- and gender-neutral program was sufficient to overcome discrimination, and whether Denver should also adopt a M/WBE initiative.

Most stated that the SBE Program cannot address the inherent advantages that White male-owned small firms enjoy compared to M/W/DBEs. City staff described being told by many M/W/DBEs "minorities and women get no benefits from the SBE Program." It was remarked that by expanding the pool of eligible firms to include the large majority of Denver area businesses, the SBE Program lessened the chances of any firm receiving a contract and thus M/W/DBEs were receiving fewer opportunities. This hurt minorities and women who needed help the most.

Some officials felt that the "good ole boys" use the Program to simply promote the SBEs they are already using. For example, at the Airport, mostly white males are used as subcontractors. Preexisting firms are certified as SBEs and are then used by the primes to meet the goal. One person mentioned that White male SBEs receive assistance from general contractors not offered to minorities and women, such as being added as an additional insured to a prime contractor's insurance.

Further, because SBE prime contractors can count their entire percentage of their self-performance towards meeting the SBE contract goals, they were often able to avoid using any other SBEs. Now, goals are met through SBEs easily. One suggestion is to only allow prime contractors to count their self-performance less the general fee and conditions.

Some persons felt that the goals committees were sometimes unrealistic when setting goals on projects that require highly specialized skills. In particular, the availability of M/W/DBEs in design is a problem.

Under the M/WBE Program, there were more good faith efforts reviews.

Several contracting and compliance officials supported amending the SBE ordinance to add a set-aside for local SBE prime contractors. This would facilitate more M/W/DBEs working as prime contractors and consultants, with all of the attendant benefits to the firms and the local economy. It would also reduce reliance on the often hard to enforce subcontracting goals on task order and on call contracts. This would be especially helpful for design firms, whose industry

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does not function like the prime contractor-subcontractor model of construction. Such a set-aside could apply outside the construction industry, where it is often even more difficult to meet goals (e.g., supply contracts, professional services, etc.).

There was universal agreement that SBEs need more training in how to do business with the City, estimating and bidding contracts, and supportive services such as lending and bonding programs, and accounting and legal services. One recommendation was to revive the mentoring program that functioned some years ago for newer firms, but the prime contractors must have incentives to participate, however. Another suggestion was to create a loan program using Community Development Block Grant funds to create a not-for-profit entity that would underwrite loans and lines of credit for City contractors.

### **2. Denver's procurement policies and procedures**

Compliance personnel eagerly sought more involvement in the contracting process from the beginning. They were often not consulted when projects are being designed. Earlier and greater input would facilitate SBE and M/W/DBE participation because these employees understand the issues and can suggest ways to reduce barriers to M/W/DBE participation. Their options are more limited after a contract's parameters have been set.

City staff discussed what they observed to be serious problems with on call contracts and task order contracts. Some believe that the use of on call contracts is "out of control." These solicitation methods hurt the small firms that cannot compete for such large procurements.

Indefinite delivery/indefinite quantity contracts are also on the rise. A compliance plan must be submitted for each order, and this was seen as too burdensome for bidders and City personnel. It would be easier to award more jobs as separate contracts, so the compliance work would already be completed by the time a department needs to procure a specific task.

Prequalification is project by project. Instituting a general prequalification procedure would assist smaller firms to bid as prime contractors as well as reduce the compliance burden on City staff.

In general, unbundling contracts would be helpful. There was concern, however, about the increased work load for City employees from having to manage more contracts.

Staff stated the City should also simplify the bidding process. Informal or so-called "letterhead" bids of up to \$250,000 should be permitted for construction. The City's general contract conditions need to be modified to apply to the informal bids so that method can be more widely used.

### **D. Conclusion**

Overall, M/W/DBEs and City personnel agreed that the SBE Program has not been an adequate substitute for the race- and gender-conscious program enjoined in 2000. Adding small firms owned by White males to the pool eligible for the contracting preference has reduced opportunities for minorities and women. Coupled with the virtual absence of M/W/DBE

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participation in the private sector and thus their overdependence on City contracts and subcontracts, this has shifted the focus from reducing barriers posed by race and gender and ensuring that M/W/DBEs have full and fair access to City contracts.

M/W/DBEs felt that there is a lack of monitoring of the SBE goals and sometimes a lack of commitment to the Program by City employees. Several majority-owned firms, however, believe the Program is too burdensome and there not enough qualified SBEs to meet the goals.

There was universal agreement amongst M/W/DBEs, non-M/W/DBEs and City officials that more training for all firms is needed to increase their competitiveness. This includes financing and bonding assistance and other supportive services for SBEs and smaller firms.

Some participants sought greater participation and authority for DSBO, including earlier and greater involvement in the contracting decision-making process and making the Division a cabinet-level agency reporting directly to the Mayor.

Regarding contract policies and procedures, firm participants suggested that contracts be unbundled; overly broad and restrictive insurance, bonding and prequalification requirements be reduced; that on call and task order contracts be reduced; that City employees communicate more with contractors and subcontractors; that the prevailing wage system be reformed; and that change order and payment applications be processed promptly.

## **Recommendations for Revised Contracting Policies and Procedures**

### **X. Recommendations for Revised Contracting Policies and Procedures**

As detailed above, we conducted a thorough examination of the evidence regarding the experiences of minority- and women-owned firms in Denver's geographic and procurement market places. As required by strict scrutiny, we have analyzed evidence of such firms' utilization by Denver on its construction and related professional services prime contracts and subcontracts, as well M/W/DBEs' experiences in obtaining contracts in the public and private sectors. We gathered statistical and anecdotal data to provide the City with the evidence necessary to consider whether it has a compelling interest in remedying identified discrimination in its market place, and if so, how to narrowly tailor any race- and gender-based remedies adopted. Based upon our results, we make the following recommendations. Some of the recommendations made below may require changes to the City Charter, ordinances, and/or State law. They will also have administrative and/or fiscal implications for the affected Departments.

#### **A. Implement race- and gender-neutral initiatives**

As discussed in Chapter II, Denver must use race- and gender-neutral measures to the greatest feasible extent to ameliorate discrimination. Such approaches can be at least partially effective, without burdening non-M/W/DBEs. We there suggest that the City consider these, and possibly other, race- and gender-neutral initiatives.

##### **1. Continue the Small Business Enterprise Program**

As detailed in Chapter IX, Denver's Small Business Enterprise (SBE) Program, adopted in 2000, has somewhat leveled the playing field for minority and women-owned and other small firms seeking construction and design contracts. The City should therefore continue to implement this important race- and gender-neutral initiative. An annual, overall goal for SBE contracting and the use of SBE subcontracting goals on particular contracts should be continued. The Program's other critical features, such as certification and goals setting standards and processes, good faith efforts waivers, and SBE outreach, have provided a solid framework and should be retained. Subcontracting goals could be set on appropriate contracts, such as where past SBE opportunities have been limited or where Denver seeks to encourage the growth of small firms.

One possible modification would be to limit the amount a SBE prime contractor can claim as credit towards meeting a SBE goal to the amount of the prime contractor's self-performance less the general fees and conditions. This would encourage SBE subcontracting by SBE prime contractors that otherwise would have fully met the goal through their own performance, thereby providing additional opportunities for a wider group of SBEs.

In addition to continuing the use of SBE subcontracting goals on appropriate contracts, Denver should consider amending the Program to include a "target market" for SBEs seeking work as prime contractors or consultants. Contracts subject to this market would be reserved for bidding solely by SBEs. The size of the contract, the type of work, the availability of at least three SBEs to perform the work of the contract (to create adequate competition), and Denver's progress towards meeting the annual SBE goal are factors relevant to the decision to set aside a contract.

## **Recommendations for Revised Contracting Policies and Procedures**

There should also be limits on the number of contracts for which a SBE could bid per designated time period. This approach will permit small firms to compete on a more level playing field with firms of comparable size, thereby somewhat equalizing some of the barriers faced by M/W/DBEs to obtaining bonding, financing, access to supply networks, etc., without resort to race- and gender-based preferences.

To support SBEs' success as prime vendors, Denver should provide additional support with payment issues, increased mobilization payments to SBE prime contractors and a "linked deposit" initiative whereby SBE prime contractors would use City contracts as collateral for loans from the City's depository institutions at lower interest rates and reduced credit standards.

### **2. Increase contract "unbundling"**

While the City has made some progress in segmenting contracts to facilitate bidding by M/W/DBEs, SBEs and other small firms, further efforts should be made. This approach was endorsed by M/W/DBEs and non-certified prime contractors. In conjunction with reduced insurance and bonding requirements, smaller contracts should permit firms to move from quoting solely as subcontractors to bidding as prime contractors.

### **3. Review surety bonding and insurance requirements**

The City should review surety bonding and insurance requirements to ensure that amounts are no greater than necessary to protect Denver's interests. There was widespread agreement amongst M/W/DBEs, non-M/W/DBEs and City staff that more particularized requirements would greatly assist all firms. This might include reducing or eliminating insurance requirements on smaller contracts, adopting standard professional liability insurance limits, and removing the cost of the surety bonds from the calculation of lowest apparent bidder on appropriate solicitations. There was also some support for owner controlled insurance programs for large projects, wherein the City would purchase an insurance policy for a project that would provide umbrella coverage for all businesses working on that project.

### **4. Review prequalification standards and policies**

Currently, firms seeking to bid as prime contractors are prequalified on a project by project basis. Several owners suggested that instituting a general prequalification procedure that would cover a specific time (say, two years), would assist smaller firms to bid as prime contractors as well as reduce the compliance burden on City staff.

There was also some support for adding an evaluation criterion of an applicant's affirmative action policies and achievements. This might include the applicant's employment of minorities and women, especially as managers, utilization of SBEs and M/W/DBEs on City contracts, and solicitation and utilization of such firms on non-goals public and private projects, modeled perhaps after requirements for contractors on federally-assisted contracts.

## **Recommendations for Revised Contracting Policies and Procedures**

### **5. Review bidding procedures**

Several City officials recommended simplifying the bidding process. A concrete suggestion is to permit the use of “letterhead” or informal bids on contracts valued up to \$250,000 for construction. This will encourage smaller firms to submit bids as well as reduce City paperwork and contract lead times. Further, the City’s general conditions could be modified to apply to the informal bids so that method can be more widely used.

### **6. Ensure prompt payments on Denver’s contracts**

All firms complained about slow payment by the City. This seemed to result from the number of steps and sign offs required. Change orders were especially problematic. Denver could convene a working group to evaluate how to streamline the process. An electronic contract tracking system, whereby contractors and subcontractors could see where the prime contractor’s invoice is in the process, would be helpful. It would also facilitate subcontractors’ ability to know whether and when their prime contractor has been paid. This would address the common complaint by subcontractors that prime contractors often withhold payment unnecessarily.

### **7. Ensure bidder non-discrimination**

Several M/W/DBEs voiced concerns that prime contractors were not soliciting their subcontractor quotes in good faith on City projects, and failed to solicit them at all on non-goals projects. To investigate this, Denver should require all bidders to submit all of the subcontractor quotes received on the project. The prices and scopes can then be compared to ensure that bidders are in fact soliciting and contracting with subcontractors on a non-discriminatory basis. A similar approach was part of the court-approved DBE plan for the Illinois Department of Transportation.<sup>232</sup>

### **8. Provide business development assistance and contract training**

There was broad consensus that offering business development assistance to M/W/DBEs and small contractors is necessary. Management, technical, technology and financial services, with defined performance measures, are crucial to the overall objective of increasing these firms’ competitiveness and market access. Denver could provide classes and individual sessions, or work with existing resources and local educational institutions to provide financial support and outreach to eligible firms.

In addition, numerous primes and City staff stated that M/W/DBEs need training in how to bid City work and administer contracts. Many problems could be avoided or lessened if smaller firms better understood Denver’s requirements for bidding, invoicing, processing change orders, closing out projects, etc. Perhaps workshops could be offered by Denver’s DSBO Office in conjunction with the City’s contracting and payment processing agencies.

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<sup>232</sup> *Northern Contracting II*, at 87 (“IDOT requires contractors seeking prequalification to maintain and produce solicitation records on all project ... Such evidence will assist IDOT in investigating and evaluating discrimination complaints.”).

## **Recommendations for Revised Contracting Policies and Procedures**

### **9. Adopt a Guaranteed Surety Bonding and Contract Financing Program**

The City should adopt a bonding and contract financing program for M/W/DBEs and SBEs seeking work as prime contractors, who otherwise cannot obtain bonding or financing or cannot obtaining bonding or financing at reasonable rates. Focus group participants familiar with the existing City bonding program commented that it is useful only for first time applicants with “A” credit ratings; unless the standard underwriting criteria are somewhat relaxed, it is doubtful that many firms, especially those owned by minorities, will benefit.

Programs that guarantee bonding and contract financing to firms that successfully complete the diagnostic process have proven to be successful in other jurisdictions in increasing the capacity of such businesses to perform as prime contractors- a critical goal of any SBE initiative. Necessary participants would be a surety company, a lender, and an experienced construction business development specialist to evaluate each firm’s capabilities, financials and other criteria relevant to obtaining bonding and financing.

### **10. Adopt a Mentor-Protégé Program**

To increase SBEs’ and M/W/DBEs’ contracting capacities, the City should adopt a Mentor-Protégé Program . Mentor-protégé initiatives were supported by M/W/DBEs and some prime contractors in the focus groups. Such a Program would seek to further the development of small firms by providing assistance in performing larger projects, moving into non-traditional areas of work and competing in the marketplace outside the SBE, M/WBE, and DBE Programs.

The mentor-protégé relationship should be based upon a City-approved written development plan, including criteria for graduation from the Program, which clearly sets forth the parties’ objectives and roles, the duration of the arrangement and the services and resources to be provided by the mentor to the protégé. Mentors would receive credit towards meeting M/W/DBE or SBE goals, and protégés would have greater access to contracts and increased opportunities to grow into prime contractors. Additional incentives, such as reimbursement for participation costs, would greatly increase the attractiveness of a Program to potential mentors.

### **11. Adopt an Internship Program**

The City should implement an internship program for young adults interested in the construction industry. Participants would work with City departments to learn about the skills relevant to construction and design contracts, develop personal networks for mentoring, and become conversant with government procurement policies and procedures. Perhaps the City could collaborate with local educational institutions to provide course credit for participation. While open to all, such an initiative would target underrepresented minorities and women.

## **B. Adopt a M/WBE ordinance and M/WBE Program policies**

Based upon this report, Denver has a firm basis in evidence to adopt a new race- and gender-based program for construction and related professional services contracts. This record establishes that minorities and women in the Denver construction marketplace continue to

## Recommendations for Revised Contracting Policies and Procedures

experience statistically significant disparities in their access to private sector contracts and to those factors necessary for business success, leading to the inference that discrimination may be the cause of those disparities. Further, individuals recounted their experiences with discriminatory barriers to their full and fair participation in the City's contracting activities. The Study provides the statistical and anecdotal evidence to answer in the affirmative the question whether there is strong qualitative evidence that establishes Denver's compelling interest in remedying race and gender discrimination because absent government remedial intervention Denver will be a passive participant in a discriminatory marketplace. While the SBE Program has reduced disparities in Denver's own contracting, there is ample evidence that it can choose to affirmatively intervene to dismantle the vestiges of the private sector system of racial and gender exclusion. A new M/WBE construction program would clearly not be motivated by the illegitimate racial stereotypes or bias, or blatant racial politics, that strict constitutional scrutiny seeks to "smoke out." While the SBE Program has created opportunities for existing M/W/DBEs, there is no doubt that current M/W/DBE availability has been depressed by discrimination. It is therefore not unreasonable to adopt a program for M/WBEs that seeks to maintain current utilization at a minimum, and perhaps to increase utilization to the levels expected in a discrimination free market.

It is also important to note that much of the utilization of Black firms in the SBE Program resulted from one large contract to a prime contractor, and that all additional measures of disparity found that Blacks and Hispanics continue to suffer unequal access to the market. To provide these historic victims of discrimination with relief is not the type of "random" inclusion that courts have found fatal to M/WBE programs. Moreover, the pool of SBEs—and resulting utilization—does not mirror the availability of small businesses in Denver's markets. Further, the share of SBE dollars awarded to firms owned by minorities and women has been trending down. These factors significantly lessen the predictive power of past SBE utilization for future Denver contracts.

Further, this Study presents additional evidence of the type and quality already found by the Tenth Circuit Court of Appeals to meet strict scrutiny. Despite the City's utilization of SBEs for its own contracting, it appears that the underutilization in the private markets in which the City is a passive participant has not changed significantly since the *Concrete Works* trial. New data on M/W/DBE availability, private sector disparity testing, potential availability estimates, and extensive anecdotal proof buttress the court's holding that there is strong evidence of discrimination in Denver's construction market.

In adopting a new M/WBE Program, Denver should revive the general outlines of the prior Program and consider the following new approaches.

### 1. Program eligibility

#### a. Certification eligibility standards

M/WBE Program eligibility should reflect the judicial consensus that narrow tailoring requires that only small firms owned by socially and economically disadvantaged persons should be permitted to participate.

## Recommendations for Revised Contracting Policies and Procedures

### i. Social disadvantage

Based upon the results in Chapters V and VI, Blacks, Hispanics, Asians, Native Americans and White women should be considered presumptively socially disadvantaged. It is critical that this be only a rebuttable presumption, such that eligibility can be challenged. In addition, other persons (disabled White males, Arab-Americans, etc.) must be able to seek certification by showing they have individually suffered bias such that their opportunities to form construction firms and to achieve success in that industry have been substantially diminished.

### ii. Economic disadvantage

Economic disadvantage can be defined as a limit on the personal net worth of the firm's owner(s). Such a test has been one factor that has convinced courts that the USDOT DBE program is constitutional and the lack of such a test was one factor that led the court to find the City of Chicago's M/WBE Program to be insufficiently narrowly tailored. In lieu of additional data, we suggest that Denver follow the lead of the USDOT and adopt DBE Program's personal net worth limit of \$750,000, exclusive of the owner's primary residence and equity in the business seeking certification. This figure could be indexed to account for the increase in the cost of living since the DBE standard was adopted by Congress in 1999.

### iii. Firm size

Finally, only small firms should be permitted to participate in the Program. Denver could adopt the same size standards governing the SBE Program, i.e., fifty percent of the SBA size standards.<sup>233</sup> In the alternative, the City could adopt the size standards governing the DBE Program, i.e., the SBA size standards, which may be more reflective of the sizes need for M/WBEs to effectively compete, especially for prime contracts.

### iv. Eligibility review

Firms' eligibility for the Program must be periodically reviewed. Many M/W/DBE programs require recertification every three to four years.<sup>234</sup> In addition, an annual affidavit attesting to the firm's continued eligibility will ensure that the benefits of the Program inure only to those firms that continue to suffer competitive disadvantages.<sup>235</sup>

### b. Certification outreach

Denver should increase its efforts to identify minority- and women-owned firms and other disadvantaged firms to encourage their owners to apply for M/W/DBE certification, if eligible. The "listed DBEs" identified in the Study's availability analysis that are not currently certified should be contacted regarding the process. This will help to increase the pool of firms from which prime contractors may solicit to make good faith efforts to meet goals.

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<sup>233</sup> Art. VII, Sec. 29-225 (a).

<sup>234</sup> *See, e.g.*, 49 CFR §26.83(h).

<sup>235</sup> *See* 49 CFR §26.83(j).

## Recommendations for Revised Contracting Policies and Procedures

### 2. M/WBE goal setting

#### a. Overall, annual aspirational M/WBE goals

The Study's estimates of the availability of M/W/DBEs in Denver's construction and design market place are provided in Chapter IV. These form the starting point for consideration of setting for overall, annual aspirational targets for City spending with MBEs and WBEs in construction and construction-related professional services. This snapshot of firms doing business in Denver's geographic and procurement market place does not *per se* set the level of M/W/DBE utilization to which the City should aspire. As discussed in Chapters V and VI current M/W/DBE availability is depressed by the effects of discrimination. A case can be made for setting goals that reflect a discrimination-free market place rather than the results of a discrimination infected market place.<sup>236</sup> Using the disparities in the earnings of M/W/DBEs compared to non-M/W/DBEs could provide a quantitative basis for such a determination.

#### b. Contract specific goals

Regardless of whether and on what basis Denver overall, annual aspirational targets, the courts insist that governments set goals on particular contracts much more narrowly. Contracts goals cannot simply be the rote application of the annual goals. Contract goals must be based upon the demonstrated availability of M/W/DBEs to perform the anticipated weighted scopes of the project's subcontracting, as well as Denver's progress towards meeting its overall, annual goals. This Study's availability estimates provide an objective starting point for contract goal setting. If the City finds that it is meeting or exceeding its annual goals, it should consider reducing the use of contract goals to ensure that the Program's implementation remains narrowly tailored. Thus, contract specific goals may be higher or lower than the annual goals. Indeed, if there are no subcontracting opportunities, no goals can be set. While it is certainly easier to apply the annual goals to each contract, to do so may be held to be constitutionally fatal. A comprehensive data tracking and contracts monitoring system will ease the burdens of contract goal setting.

Further, City staff involved in the process recommended that DSBO be involved from the beginning of the contracting process, *i.e.*, drafting the initial specifications. This will facilitate consideration of M/W/DBE issues and provide earlier opportunities to reduce contracting barriers for such firms.

Finally, Denver should bid some contracts it determines have significant opportunities for M/W/DBE participation without goals. These "control contracts" will illuminate whether M/W/DBEs are used or even solicited in the absence of goals. Such unremediated markets data will be probative of whether Denver still needs to implement M/W/DBE goals to level the playing field for its contracts.

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<sup>236</sup> See 49 CFR §26.45(d)(DBE goal must reflect the recipient's "determination of the level of DBE participation you would expect absent the effects of discrimination").

## **Recommendations for Revised Contracting Policies and Procedures**

### **3. Contract award procedures**

Once goals have been set on a contract, it is critical that standards be adopted for contract award. This includes consideration of the commercially useful function of any proposed M/WBE, and of bids that do not meet those goals.

#### **a. Determination of commercially useful function**

All proposed M/W/DBE utilization must be evaluated to determine whether the firm being utilized is serving a commercially useful function. Even a firm that is legitimately owned by a minority or woman can be used as a “pass through” or “front” on a specific contract. Commercially useful function means responsibility for the execution of a distinct element of the work of the contract and carrying out the M/W/DBE’s responsibilities by actually performing, managing, and supervising the work involved, or fulfilling its responsibilities as the joint venture partner. The determination that a firm is performing a commercially useful function will be based upon the amount of work subcontracted, normal industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing, and other relevant factors. It should be noted that the setting of contract goals based upon the real subcontractable scope of work should reduce the incentives to claim credit for work that is not commercially useful to meet artificially high goals.

#### **b. Good faith efforts reviews**

The courts have categorically held that strict scrutiny’s flexibility test requires that waivers of goals be available to a bidder who made good faith efforts to meet those goals. A bidder that makes good faith efforts must be treated the same as one that met the goals. To do otherwise—that is, to favor utilization above good faith efforts—will undoubtedly be held to be an impermissible race- and gender-based quota. That so few waivers were granted by the City of Chicago was a major cause of its M/WBE Program’s constitutional infirmity. Standards for demonstrating good faith efforts must be adopted, so that both bidders and Denver staff have clear guidelines about when good faith efforts have been met. We recommend the outlines of the good faith efforts provisions of Part 26 CFR §26.53 as a guide for the City’s legislation and policies.

### **4. Contract performance procedures**

Once a contract with M/W/DBE commitments has been awarded, it is crucial that those commitments be monitored and that sanctions for non-conformance with the contract be available. Contract closeout is very late in the process to determine that a prime contractor as failed to utilize M/W/DBEs or that firms have not been paid. As previously discussed, the implementation of a comprehensive data tracking and monitoring system is a necessary element of a successful Program, as well as prompt payment and prohibitions on unauthorized substations of subcontractors. It also obviously preferable to correct problems rather than sanction firms after the fact.

## **Recommendations for Revised Contracting Policies and Procedures**

### **5. Program administration**

A new M/WBE Program cannot be implemented without additional resources. The Division of Small Business Opportunity will require more staff to conduct outreach, certify applicants, set goals, review bids and monitor contractor performance. Further, it is essential that other departments also be held responsible for meeting Denver's Program objectives. The Program will be less successful if it is seen as "DSBO's" Program," rather than a City-wide initiative for which all department heads will be held responsible. Job descriptions should reflect this priority, with meeting Program objectives one evaluation criterion for raises and promotions.

### **6. Develop performance measures for Program success**

Virtually all focus group participants agreed that greater support to develop and grow M/W/DBEs is needed. While recognizing that the systemic barriers faced by minorities and women in the construction industry will not be easily overcome, developing quantitative performance measures for certified firms and overall Program success would provide benchmarks for evaluating the Program. Possible benchmarks are the achievement of business development plans similar to those used in the Small Business Administration's 8(a) Program, including revenue targets for certified firms; increased prime contracting by M/W/DBEs; and increased graduation rates. It will be important to track the progress of graduated firms to evaluate whether they succeed without the Program, and if not, why not.

### **7. Develop guidelines and procedures for Program violations**

Contract terms and conditions should be reviewed to ensure that the City has the maximum legal ability to enforce the Program's provisions and the contractual commitments of contractors. The City Attorney's Office should work with DSBO and the purchasing and contract departments to develop standards for enforcement and sanctions.

### **8. Program review and sunset**

Denver should include a provision requiring that the Program be reviewed at least every five years, and that only if there is strong evidence of discrimination should it be continued. The Program's goals and operations must also be evaluated to ensure that they remain narrowly tailored to current evidence. A sunset date for the ordinance, when the Program will end unless reauthorized, should be included.

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